The Builder.

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Lightning Conductors.

WE can heartily congratulate the Lightning Research Committee on their valuable Report, which has just been published in the twelfth volume of the *Journal* of the Institute of Architects (p. 405). It will be read with equal interest by architects and electricians, for although it contains little that is absolutely novel, yet the conclusions arrived at after laborious and accurate investigation will be of the greatest assistance to those who endeavour to design systems of lightning conductors on scientific principles. The wording of the report is very clear, practically no technical terms being used, and the arrangement of the matter is admirable. We have only noted one misprint, "3" for "5," near the top of p. 415.

It is now about sixteen years since Sir Oliver Lodge read his classical paper on Lightning Conductors to the Institution of Electrical Engineers. His conclusions were violently attacked at the time by the older school of electricians, but they are now nearly all adopted by those who are capable of forming an independent opinion on their merits. It is extraordinary, however, to note that many engineering pocket-books are still publishing many of the erroneous recommendations of the Lightning Rod Conference held in 1882. If this report merely has the effect of stopping the printing of nonsense about the areas protected by lightning conductors and the superiority of copper to iron for conveying a lightning discharge, it will perform a most useful function.

In the preface to the Report Sir Oliver Lodge lays emphasis on the importance of distinguishing between two kinds of lightning flashes. When the difference of pressure between a cloud and a prominent object on the earth's surface is gradually established we get the "A" flash. If the prominent object be a tower, with a pointed lightning conductor, then the flash will almost certainly strike the conductor, as the brush discharge from the point rapidly ionises the air in the neighbourhood, and makes the path to the point the path of least resistance. In the second kind of discharge we get the "B" flash. In this case we have the impulsive rush that takes place when a discharge ensues between two clouds and one of them instantaneously overflows to the earth. It is exceedingly difficult to protect buildings from the effects of this latter kind of discharge. Sir Oliver Lodge compares it to an avalanche. Unlike a trickling stream of water, it will not take what is apparently the path of least resistance; but, crashing through all manner of obstacles, it often moves in quite unexpected directions. Many of the ninety-eight cases of buildings struck by lightning, the reports of which are summarised by the Committee, illustrate the difficulty of protecting buildings from "B" flashes. For instance, Mr. Hedges reports a case where a private dwelling-house was struck twice, although every chimney-stack was fitted with a lightning rod and the earth connexion was good. The first flash struck and displaced the conductor, and also did damage to the chimney and to slates. The second destroyed a chimney, damaged the roof, and struck a statue not provided with a conductor.

A novel point in connexion with lightning rods is illustrated by several of the cases reported. Whether the discharge be oscillatory or not, metallic objects in the neighbourhood of the lightning conductors will have high electromotive forces induced in them. It is advisable, therefore, to connect the points of those metallic objects (generally the ends), where dangerously high pressures are developed, to the earth. The accident to St. Paul's Church at Bedford gives a good illustration of this inductive effect. The conductor consisted of a copper cable extending from the seat of the weathercock to the lead flat at the bottom of the spire. The discharge passed down the conductor to the lead flat, proceeding to the earth through the rain-water pipes, and setting up in its passage violent inductive effects in neighbouring metallic objects. As these were not connected with the earth the discharges proceeding from them displaced heavy beams inside the building and split the supporting corbels.

A useful feature of this report is the publishing in parallel columns of the Lightning Rod Rules issued in 1882 and the comments made on them by the Lightning Research Committee. It is

now definitely stated that it is not necessary to go to the expense of electro-plating points. It seems to us, however, since the expense is a trifling matter and the plating prevents corrosion, that in some towns it would be distinctly desirable. We are glad to note that the Committee lend no support to the practice of fixing lightning rods to buildings by means of glass or other insulators. A few years ago this practice was advocated by several leading scientists.

It is recommended that in most cases the lightning rod when vertical should be supported at some distance away from the building. We suppose that a method similar to that which Mr. Hedges uses to support the conductors at Westminster Abbey meets with the approval of the Committee. We thought that this was done to avoid "side flash," but the reasons adduced are that it prevents dirt accumulating, and that it obviates the necessity of running the conductor round projecting masonry or brickwork.

Manufacturers should note that tall chimney shafts are not efficiently protected against a "B" flash if only a single conductor be used, as a hot column of smoke conducts as well as, or even better than, a rod. A circular band in the form of a coronal, with four or more conductors, should surround the top of the chimney, and it is better to use two lightning rods to connect this with the earth.

It is interesting to note that no cases of damage to modern steel frame structures have come under the notice of the Committee. They point out that in many cases the steel columns stand on stone foundations, and they recommend that they should be effectively earthed at the time of construction.

With the eight practical suggestions with which the Committee conclude their Report we are in entire agreement. Perhaps a word of warning might have been added to the fifth suggestion, which states that "all roof metals, such as finials, ridging, rain-water and ventilating pipes, metal cowls, lead flashings, gutters, etc., should be connected to the horizontal conductors." It is easy to imagine cases where, if this advice is slavishly adhered to, metal balconies, etc., may prove to be death-traps in sultry weather. The advice is also given to connect turret clocks with the conductor. One effect of this would be to make the clock winders nervous on sultry days.

In an appendix to this Report are given details of the methods advised and adopted for the safety of buildings in France, Holland, Germany, and Austria-Hungary. Dr. Van Gulik's report to the Dutch Academy of Science is particularly interesting reading. Owing to the difficulty of fixing high terminal rods he advises that only short rods be used. He states that for lightning conductors iron is better than copper, and when well galvanised it will resist atmospheric influences for a long time, especially if protected by a coat of paint occasionally. He also advises that the thickness of the conductors should be reduced. It is particularly gratifying to note that practically all the suggestions made and quoted in this report have a scientific basis, and it will well repay careful study. Until our knowledge of the distribution and laws of atmospheric electricity is extended it seems probable that this report will be the standard authority on the protection of buildings from lightning.

WORKMEN'S COMPENSATION.

AT the commencement of the present law sittings the Court of Appeal have again been occupied with Workmen's Compensation, some thirty-two cases having been set down for appeal in the list, and on the decisions now given the main point of difficulty for determination has been—what is now to be included in the word "accident"? In our recent Note on Brintons, Ltd., *v.* Turvey (the anthrax case in the House of Lords) we pointed out that that judgment, with the reservations it contained, would now raise complicated points for decision as to what connexion must exist between the disease and the employment, and the time and nature of its origin, for injury by disease to be deemed an "accident"; and we referred to the evidence given before the Departmental Committee especially with reference to blood poisoning. The Court of Appeal have now, in the case of Steel *v.* Cammell, Laird, & Co., had to consider a case of blood poisoning. The applicant was employed by the respondents, who were shipbuilders, as a caulker, caulking watertight shoes with red and white lead. He had been working for the respondents for two years, when one day he was suddenly seized with cramp and afterwards became paralysed. The medical evidence was that the lead poisoning might have been caused either by inhalation into the lungs or by eating without having removed the lead from the hands; that it was a result which might be expected from the man's work, but that only a small number of such cases occurred amongst the very large number of persons working with red and white lead. The Court of Appeal, whilst commenting on the difficulty in view of the decided cases of determining what was intended by the word "accident," held that it must be something the origin of which could be ascribed to a particular date, basing this reasoning upon section 2 sub-sect. 2 of the Act, which requires notice of an injury to be given and the date at which it was sustained.

The Court followed the same line in two other cases, Marshall *v.* East Holywell Coal Co. and Gorley *v.* Owners of Barkworth Colliery, which were cases where miners were incapacitated by complaints known as "beat hand" and "beat knee," due to inflammation of the soft tissues consequent on the nature of their employment, constant jar of the hand or pressure from kneeling. The difficulty of coming to a conclusion in these cases is now very apparent. The rule laid down by the Court of Appeal is an easy-working rule, but how far is it consistent with the finding of the House of Lords in the anthrax case? How can it be said that a time could be fixed for the origin of that complaint, any more than in lead poisoning? The only time which seems to have been regarded in that case was the time when the man was taken ill. There is one great distinction between the miners' cases and the anthrax case, which enables it to be seen why one may be deemed "accidental" whilst the others are not. In the miners' cases, beat hand or beat knee are complaints usual to the nature of the employment, and which must be anticipated; but anthrax is not a usual consequence, it is specially guarded against by appliances such as fans, and infection may therefore be said to be accidental. The lead poisoning case is more difficult to distinguish, since in that case the evidence was that, although such a disease was a possible consequence, it was by no means a necessary one, since there were but few cases amongst the large number of men employed in working with red and white lead.

We can only repeat what we said in our recent Note on Brintons, Ltd., *v.* Turvey, that the question urgently calls for legislation, and should certainly be dealt with in the Bill now before Parliament. The Departmental Committee advised that disease consequent upon occupation should be dealt with separately under a scheme of sick insurance, and instanced the very difficulty now experienced, viz., the difficulty of determining its inception, and it is now for the Legislature to put an end to much litigation by declaring once and for all, and in clear terms, its intention on the subject.

Another point in connexion with the word "accident" had to be considered by the Court of Appeal in the case of Wilkes *v.* Dowell & Co., where a man engaged in unloading a ship and standing on a plank over the hold was seized with an epileptic fit and fell into the hold, sustaining injuries. The Court, reversing the finding of the County Court judge, held this to be an accident under the Act, and to have arisen out of and in the course of his employment; finding, on the authority of the decision of Fenton *v.* Thorley, in the House of Lords—commented upon by us August 22, 1903—that the efficient cause was the fall, and the dangerous position he stood in was necessary to his employment.

One of the difficult questions to be decided under the Act is—when does the employment commence so as to bring the workman under the operation of the statute? There have been many decisions dealing with this question, and they are by no means easy to reconcile one with another. The latest case is that of Sharp *v.* Johnson & Co. (May 4, 1905). The applicant was a painter employed by builders upon the erection of some schools for the County Council at Catford. The hours of work commenced at 6.30 a.m., and the men had to deposit a check at the office near the entrance to the works on arrival, and take the check out again when they left. The applicant had been engaged on this work for some five weeks, and he and many others of the workmen had been in the habit of coming to the works by a train which brought them there about 6.10. The man on August 30 arrived as usual, and proceeded to the office to deposit his check, and he would then have proceeded to the mess-room, a room provided by the employers, where he would have remained until the whistle blew for work. On this morning he found on his way to the office that a

trench, or hole, had been opened up between him and the office. The watchman met him, and offered to deposit his check for him, and as he was in the act of handing his check to the watchman a piece of quartering slipped, and he fell into the hole, sustaining injuries. The Court of Appeal (reversing the Court below) held him to have sustained these injuries in the course of his employment. The Court laid it down that the test was not whether the man had or had not commenced work, but that a reasonable margin must be allowed to enable the workman to reach his actual place of work upon the premises, and that if in that interval he was engaged on anything for the benefit of his employer as well as himself, he was acting in the course of his employment. They observed that in this case it was necessary that the man should get to the works twenty minutes before the time of commencing actual work, and the employers had provided a place for refreshment.

Only one other case at present requires noting, Back *v.* Dick Kerr & Co., which turned upon the area of employment on or in or about an "engineering work." The man who was injured was employed by contractors who were engaged in taking up the old tramway lines and laying new rails for the tramways in Exeter. Part of the work related to the rails running from St. David's station and down Queen-street. The new rails were brought to the London and South-Western Railway Station, the yard of which abuts on Queen-street, and some of the rails were, by an arrangement with the railway company, stored in this yard, and the man was engaged in unloading the rails and stacking them in the yard when he met with an accident. It was admitted that the tramway was within the definition of "engineering work," and the only question was whether the applicant was engaged on or in or about it. The County Court judge held that he was, but the Court of Appeal reversed this finding. The actual work under the contract which was being carried on at the time of the accident was some 700 yards away from the yard, but the Court does not seem to have based its decision upon that fact alone, but upon the fact that the station yard formed no part of the physical area of the engineering work, as the stacking of the rails there formed no part of the work which the contractors had undertaken to execute. The limitation of area, as we pointed out in our Note on the case of Pattison *v.* White (November 19, 1904), is not satisfactory, since at its limit it will always seem to be the cause of hardship to someone, and it is exceedingly difficult of determination, as it has been held that a quarter of a mile may be within the limit whilst two and a half miles has been held outside it. The decision in this case may suggest, however, a better test in some cases—viz., is the man engaged directly on the undertaking, or only on an incidental process ancillary to it?

ROYAL EXCHANGE.—On May 30 will be unveiled a panel painted by Mr. W. F. Yeames, R.A., in the ambulatory of the Royal Exchange. The panel depicts the "Foundation of St. Paul's School by Dean Colet," and is a gift by Mr. J. Horsley Palmer.

NOTES.

The Institute Council Election.

We have printed more than one letter protesting against the endeavour to make the election of members of Council turn only on the question of their adherence to a special policy. But there is another point in connexion with the subject which had better not be forgotten. The Council now elected will be the Council concerned in arranging the International Conference of Architects to be held in London next year. We put it to those who are so anxious to secure the supporters of their own shibboleth at all costs, how do they think it would look to architects from France and Germany, to find that the distinguished architects whose names they know are all outside of the Council, and that the official body of the Institute consists mainly of people they have never heard of?

The Thames Conservancy Bill.

IN view of the intimation from an authoritative source that the objects of the London County Council Bill are too sweeping for consideration in a private measure, it looks very much as if the needs of the Port of London will not receive adequate attention for some years. For this reason the Bill of the Thames Conservancy acquires fresh importance. By abandoning all the clauses which deal with the upper river and retaining only those intended to authorise the board to carry out the scheme of dredging a channel between the Nore and Gravesend, the promoters have had the satisfaction of seeing the Bill passed for second reading. If finally entrusted with the powers desired, the Thames Conservancy will be enabled to effect a much-needed improvement at the moderate cost of about 400,000*l.*, and the way will be as much open as ever for a comprehensive measure dealing with the port generally. As a purely temporary expedient the Bill deserves support. It is a thousand pities that any makeshift should be necessary.

Strikes and Trades Unions.

THE law of trades unions is in a transition state, and offers conundrums impossible for the lay mind to solve. The Court of Appeal have now reversed the judgment in The Denaby and Cadeby Main Collieries, Ltd., *v.* The Yorkshire Miners' Association and Others, in which the plaintiffs on the findings of the jury had recovered damages against the Association and others for having brought about and then maintained a strike. The Court of Appeal were unanimous in finding on the evidence that the defendants were not liable under the first head, and that the branch unions had acted independently in starting the strike; but the question of principal importance is whether by having granted strike pay they were liable as having assisted to maintain the strike, and on this point the Master of the Rolls dissented from the majority of the Court. The Master of the Rolls held that the Association were liable for the illegalities perpetrated during the strike by having, with full knowledge of the facts, supported the strike by allowing strike pay, but Lord Justices Mathew and Cozens-Hardy came to an opposite conclusion. The case is of extreme importance, since the finding as it stands amounts to this, that the subscribers of money to any cause are under no legal liability to third parties, even although they know that the cause they are supporting is being carried on by illegal methods. A stay of execution was asked for, and no doubt this case, like so many of the recent cases on the law relating to trades unions and strikes, will be carried to the House of Lords.

Report on the Aylesbury Railway Accident.

AS WE suggested in a "Note" on page 4, the immediate cause of the derailment which occurred at the Aylesbury curve, in December last, was the excessive speed at which the train was moving. Colonel Yorke, in his report on the accident, confirms this forecast, and states some opinions which we trust will receive the careful attention of the railway companies concerned. From the evidence given at the Board of Trade inquiry, it appears probable that the unfortunate driver of the train failed to reduce speed owing to lack of familiarity with that section of the line in which the curve is situated. We entirely agree with Colonel Yorke that the curve, although not dangerous for local trains stopping at Aylesbury station, is eminently unsuitable for the fast trains of the Great Central Railway, and that the Metropolitan and Great Western companies ought to construct a new junction between their respective systems. The companies know this as well as Colonel Yorke does, and have brought forward several schemes for improving the line, but have never been able to decide upon concerted action. Now that a serious accident has taken place they may perhaps awaken to a sense of their duty. Colonel Yorke considers the curve in its present condition to be a distinct source of danger even for the speed of fifteen miles an hour. Hence the public are clearly entitled to demand the immediate modification of the existing curve and the construction of a new approach without further unnecessary delay.

Tramways and the Roads.

IN the case of The Mayor, etc., of Wandsworth *v.* The London United Tramways (1901) the local authority raised an important question as to the powers of the tramway companies to break up the roads for all purposes of the undertaking. The Tramway Company had given notice to break up certain roads for the purpose of connecting their tramways with a power station belonging to the Underground Railways of London Co., but the plaintiffs applied for an *interim* injunction to restrain them from so doing on the ground that the company had no power to break up or disturb streets except where they were empowered to lay the tramlines themselves. The Tramway Companies Act, referring to the district in question, incorporated section 27 of the London United Tramways Act, 1901, and the decision turns on the effect of that section, and the Court has held that the latter part of this section contains general

powers, as contrasted with the special limited powers contained in the earlier part of the section, which give the company the right to connect with a generating station, which need not necessarily be that of the company. When Parliamentary powers are granted which will interfere with or override the rights of the general public they should be given in clear and specific terms, and in this particular case it would appear that when the Act affecting this district was applied for only those householders and owners of property on the direct line were affected with the notices required by the Parliamentary standing orders. The result of the decision would appear to be that the owners of property in the streets affected by this deviation had no opportunity of being heard or of protecting themselves at the time the Bill was applied for.

The Jamrao Canal Head Works.

AT the head of the Jamrao Canal, in Sind, some extensive masonry works have been constructed for the purpose of regulating the supply of water from the Eastern Nara, an old river-bed now used as a main or feeder canal. In order to insure the efficiency of the canal regulator, it was necessary to build about three miles of flank embankments to confine the ordinary supply and the flood discharge to the required channel of the Nara, for this waterway is exceedingly apt to change its course and to split into branches among the mobile sands between its banks. Training walls were also required to direct the flood water to the weir and to prevent the river from undermining the embankments and outflanking the works. The weir across the main channel is 1,250 ft. long, and is so designed that the maximum depth of water shall be next to the Jamrao Canal regulator. All these works are built on sand, the embankments being simply faced with earth and brick pitching, while the weir consists of a thin crust of masonry laid over the sand, with sheet piling on the upstream side and a row of well-blocks with sheet piling between them on the downstream side. An interesting feature is the apron on the downstream side of the weir, this being made of separate concrete blocks, which, having only mud joints, are free to settle in case the level of the supporting sand should be lowered by scour. Blocks were used instead of a continuous mass of concrete, so that their settlement might prevent the works from being undermined, an object which seems to have been satisfactorily attained.

Surveying Abroad.

WE have often pointed out the trying conditions under which surveys have to be conducted in undeveloped countries, where the surveyor has none of those adventitious aids so amply provided at home. He has always to display resourcefulness of no mean order, and very often to undertake athletic feats involving considerable powers of endurance. This aspect of survey work is well illustrated by the paper read last week before the Geographical Society by Major Ryder, R.E., on the subject of the surveys recently carried out in Tibet. Major Ryder shows that much of the work was accomplished in the face of very adverse circumstances. The triangulation of one district necessitated the climbing of rugged and lofty mountains and the taking of observations at the top in a bitter wind; one river was crossed with the utmost difficulty owing to the masses of ice whirled down by the rapid current, and at times the cold was very severe, the minimum temperature recorded being 56° of frost Fahrenheit. Worse than anything, however, was the biting wind, in which the warmest clothing seemed of little use. Work was conducted under such conditions for days and months without intermission, testifying to the energy and determination of the officers and staff. Apart from its general interest, this paper is of special value to surveyors.

Mr. Hunt's Lady of Shalott.

MR. HOLMAN HUNT'S latest picture, "The Lady of Shalott," now on view at Messrs. Tooth's Gallery in the Haymarket, is one of the finest things he has ever done. All the famous pictures by this remarkable painter we have not been able to admire to the extent which is the fashion. In some of them he seems a great painter, or a painter with great ideals, who has wrecked himself to some extent by a wrong system; an endeavour to paint every detail to an extent which destroys breadth and balance of effect, and leaves the face and limbs of a figure with a dead leathery aspect which is not that of life. And we must confess that the moral meanings attached to his religious pictures have seemed to us often too childlike (we will not say "childish") for any but children. And in this picture also there is an immense amount of detail painted with extraordinary force and brilliancy, but then it is essentially a foreground picture, and the detail is all interesting and significant; and it is beautiful. The figure of the lady, with the kind of rich peacock feather cuirass which she wears, and her mass of brown hair blown above her head as if by the wind of the spell which wafted away the web, is very fine and romantic; it suits the poem; and the bare feet are beautifully painted. Also the landscape in the mirror is really a landscape in a mirror, and not too highly finished to lose distance and air. By a happy thought, the contrast between mirrored daylight and open-air daylight is brought out by the introduction of the small opening in the wall at the top of the scene, showing the real blue sky and a bit of cloud through it; thus assisting the effect of the mirror. It is the finest illustration of Tennyson's beautiful and fanciful poem that has ever been painted.

The Goupil Gallery.

AT the Goupil Gallery there is a collection of two groups of works by a lady amateur, Lady Gray Hill, which give evidence of very unusual versatility of talent. There is a collection of pictures, some in oil and some in water-colour, of Syria and Egypt, which certainly have a little of the character of amateur work in their simplicity of scheme and avoidance of detail, but which nevertheless convey the impression of truth of observation and representation; they seem to bring before us the arid and tumbled wastes of the wilderness of Judæa and the Red Sea Coast as they actually appear to the eye that sees them; for even without knowing a country oneself, one may receive from the very manner of a picture an impression of truth or the reverse; and these give the impression of truth. One wall of the same room is entirely occupied by a series of decorative panels of flowers painted in oil by the same lady—as different a kind of thing as possible from the pictures, but these are equally good in their way, effective in arrangement and very fine in colour; we may especially mention "Amaryllis" (69), "Tawny Chrysanthemums" (81), "Yellow Chrysanthemums" (87), and "Sweet-peas" (96). In the same gallery is a collection of small landscapes in oil and one large one, by Mr. Robert Fowler. Of the small ones the best is "Catherine Rock, Tenby" (20), not only a fine freely handled landscape but a very truthful representation of the place. "Yachts, Menai Straits" (25) and "Near Pennard Castle" (33) are among the best of the others. The large picture "Royal Windsor" (32) does not satisfy us, but it is difficult to say exactly why; perhaps the painting of the castle, which fills up the background on the other side of the river, is a little too scenic in effect and lighting.

The Leicester Gallery.

AT the Leicester Gallery is a collection of paintings, pastels, and water-colours by the late Mr. Boughton. The larger heads and half-lengths show that cold whiteness of colour in the face which was a mannerism in this artist's pictures of women; we prefer the smaller-scale figures. Several of these illustrate very well Mr. Boughton's way of planting a single figure in a landscape of which it forms, as it were, part of the expression. Of this class are "The Coming Storm" (44), where a girl sits by the seaside and looks anxiously toward the stormy quarter; "Meditation" (45), a very pretty girl standing in the middle of a moorland scene; and "A Grey Day" (53). Among some landscape studies may be especially noticed "Marshland in Winter" (15), a composition in parallel lines, and "On the Spey" (47). In another room in the same gallery is a collection of water-colour drawings of "The Cathedral Cities of England" by Mr. R. W. Collins. We can hardly call these first-rate drawings of the cathedrals, where these form the principal element of the picture; the best are the views showing bits of the cathedral towns, such as "The Old Bridge over the Dee, Chester" (15); "Old Houses on Elvet Bridge, Durham" (23); "The Market Place, Wells" (32); and "Bootham Bay, York" (37), with the cathedral towers showing over the houses. Of the cathedrals the best drawing is perhaps "Norwich—from a Canon's Garden" (76); but in general the indication of the architectural detail is not very well or carefully given; the old houses in city corners are better treated and seem to be more congenial to the artist's style.

The Fine Art Society.

AT the Fine Art Society one room is at present occupied by Miss Lucy Kemp-Welch's vigorous picture, "Timber-

hauling in the New Forest," exhibited at last year's Royal Academy, and a number of interesting studies of horses, dogs and cattle, some of the original studies for "Timber-hauling" being included. Among the best are "Study of a Sheep" (12); "Low Tide at St. Andrews" (11), a capital study of boats a-ground; "Cliff Pasture" (35), "Study of Black Cow" (37), and "Study of Gull Alighting" (57). In the same gallery is a collection of water-colours by Mr. A. J. Warne Browne illustrating scenes in South Africa. But for the sea pieces, we should have classed these among what we call topographical pictures—illustrations of places rather than landscape-painting in the higher sense; but all those in which the sea is prominent are very good, and we should think the artist's real power lies in that direction. There is, however, a fine representation of a richly wooded scene in "Yellow Woods Gorge, Gedultz River" (7), and in "A Hot Day, Worcester" (35), the effect of strong sunlight is very well conveyed. As illustrations of South African scenery the collection has of course a special interest at present; it tells us something of the scenery of a part of the world with which England has become very closely connected.

The Lefèvre Gallery.

AT the Lefèvre Gallery (1A, King-street, St. James's) there is a small exhibition on view which contains some fine pictures of the modern Dutch School. There is a large upright landscape by W. Maris, "Cattle Drinking," on a much larger scale than is usual with this painter; it is nearly all sky, and very fine, though not equal to the smaller "River View" in the upstairs room, which is one of the finest works of W. Maris that we have seen. In the same room is a fine painting by Weissenbruch—"Low Tide." P. P. Schiedges, a painter whose name is new to us, appears to be a follower and imitator of W. Maris; and, as far as his skies are concerned, a very successful one. There are other works worth attention in the rooms, which are unfortunately not very well lighted for exhibiting pictures, not having been built with that object.

Mr. Greiffenhagen's Water-colours.

AT Messrs. Dowdeswell's Gallery is a collection of water-colour drawings of Naples by Mr. Maurice Greiffenhagen, which we looked to with some interest, in view of the artist's very original talent as an oil-painter, and with which we were much disappointed. They are drawings in a peculiar mannered style which conveys no idea of atmosphere or distance, with a treatment that produces somewhat the impression of their being produced by flat inlays of different coloured material. They are not commonplace, certainly; but they are eccentric and not satisfying either to the eye or the judgment.

Metal-Work and Jewellery.

MR. AND MRS. NELSON DAWSON have on view at 111, Jermyn-street a collection of some of the metal-work and jewellery recently made by them. The jewellery consists of necklaces, pendants, and other ornaments, partly decorated with precious stones, partly with translucent enamel. The enamel, with its iridescent colour, has a beautiful effect; in a decorative sense it is perhaps preferable to the stones; and we were struck with the delicacy and variety of the gold and silver chain-work with which the ornaments are suspended; showing how much invention may go to the mere designing of the form and proportions of chain-links. It is almost needless to say that there is no imitation of natural forms in this work, such as pervades M. Lalique's splendidly executed work mentioned last week; it is all pure decorative design. Among the silver-work in the shape of caskets, cups, spoons, etc., are some admirable things, in which the same good taste in form and design is everywhere apparent.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

AMONG the designs for public buildings not already noticed is an admirable one by Mr. Leonard Stokes for "Town Hall Chelsea: Proposed Extensions" (1518). There is no plan to show us exactly what the "extensions" are, but the front as shown in this perspective view is a model of architectural refinement and good taste. The stone-faced pavilions at the ends, decorated with an order, are cut off from the centre portion by a quarter-curve on plan; the centre portion is in brick with a medallion cornice, stopped against the end pavilions, the windows very simply treated but with little points of detail which remove it from the commonplace; in the centre a clock is projected, in the old-fashioned manner, at right angles to the building. The same architect's "Grammar School at Lincoln" (1535) is shown in an excellent water-colour drawing; a building with a deep-set round-arched loggia on the ground story and large mullioned windows above, promising plenty of light; the whole completely scholastic in expression. Messrs. Mitchell, Raine & Payne's "Proposed New Town Hall, Durban" (1611) is probably a competition design—effective as such, but rather "mixed" in composition: no plan. Mr. Paul Waterhouse shows a perspective view of the "Medical School and Nurses' Home, University College Hospital" (1623). The front is accentuated at the centre and ends by pavilions with an order; pilasters at the ends, columns in the centre, each column with four large boxes on its lower portion in the shape of rustication blocks, according to a fashion now prevalent; it has a bold effect, no doubt, but somehow seems to suggest that something is unfinished in the execution. The intervening portions are treated in a picturesque manner, stone in the lower portion, brick above; the grouping of the windows in the lower portion is original, but does not seem quite to belong to the rest of the design; it is a pity that no plan is furnished in the case of building where practical arrangements must be so important. But this is the case over and over again, nor is there any improvement in this respect in the architectural room; in the majority of cases it seems to be considered sufficient to show the external form and treatment of a building, but as to what this expresses and what it is based on we get no information. Mr. Owen P. Parsons's "Competition Design for City of Wakefield Library" (1629) is a very pleasing design, in a good masonic style of treatment, with a low octagon cupola over the centre; the whole is rather American in taste, which is saying well for it, for American architects treat this class of building, in general, exceedingly well. Messrs. Harris & Towse also deserve praise for their second premiated design for Torquay Municipal Offices (1408), a design, architecturally speaking, in one story; a low rusticated front forming a curved sweep on plan, and treated with considerable power and in a style well expressive of municipal offices. Mr. Dare Bryan's "Western Theological College, Bristol" (1632) is explained by a small plan, which shows clever treatment of an angle site, and the building is picturesque in grouping and effect, but the two octagonal turrets introduced, pleasing in themselves, do not arise out of anything in the plan, but are only additions for the sake of the picturesque, which is not a true architectural treatment, though common enough, as we all know.

Church architecture is not very largely represented this year. The first exmple we notice is a small and what may be called an ostentatiously bad drawing, in thin scratchy pen line, showing "The Church of St. Stephen, Springfield, Wolverhampton" (1409), by Mr. C. R. Ashbee. This is an originally treated building, apparently in brick and with a West-end tower standing apart from the church and set askew to it, and connected with it by a flying gallery. This is picturesque, and if the author had only added a plan we might have been able to understand why the tower is so oddly placed in relation to the church. If there is no reason for it in the site, it is rather of the nature of manufactured picturesque. The belfry stage of the tower is treated with some power, otherwise the design is as plain as it can well be, and might have been just as effective with a little more attention to refinement of detail. A pencil sketch of another view of it, which, as drawing, is worse than this one, is hung in another part of the room.

A large frame contains plan, sections, and elevations of Professor Pite's "Christ Church, North Brixton" (1423), which is the most important exhibit in Church architecture. This is also a round-arched building, severe in treatment but not so destitute of style as the last-named (by "style" we mean that quality in design, not the adoption of any particular archæological style); it is largely in brick, with some stone pilasters and mouldings, etc., and is based on Byzantine ideals. The side elevation does not explain itself very well, for it gives the idea (owing to the tinting) of there being lofty open arcades with recessed walls in the rear, but the plan shows that this is not so, only that the less structurally important portions have a darker tint. The large semi-circular windows, in which the glazing divisions are very effectively designed, give a great deal of character to the building. An octagon apartment in the centre of the long narthex develops effectively and suitably into a turret and cupola; but the larger octagonal cupola, near the east end, does not seem to us to have quite sufficient suggestion in the ground plan, and sits rather awkwardly on the sloping roof of the nave. However, this is a remarkable piece of work, and worth study. The sections are interesting; the vaults are shown in green and white brick, and the commandments "writ large" upon the east wall instead of being confined to small panels. There may be different opinions about this method of doing it, which however has at all events the advantage of rendering the Mosaic Law visible and legible to all in the church, so that they cannot plead that it has not been brought under their notice.

Mr. Caröe's "Church of SS. Andrew and Patrick, Elvedon" (1433), is shown in a large pen line perspective very effectively drawn; the piers are treated in an original manner, with capitals of a Byzantine type and shafts which are panelled in niches on each face; there is a bold double hammer-beam roof decorated with angels with outstretched wings; we like both roof and substructure separately, but surely the former is rather ponderous for the latter, and seems somewhat to crush it. Mr. Tapper's "Church of St. Erkenwald," exterior and interior (1458 and 1641), was illustrated in the *Builder* of May 6, to which we refer the reader; it shows a very solid treatment of the interior, with internal buttresses with passage-way arches in the lower portion, the arches over the windows springing directly from the sides of these buttresses without any impost; all this is very good—the Gothic spirit without the imitation of Gothic details; the lofty iron chancel screen has also a good effect; but it would have been more satisfactory if the drawings had shown more indication of the material of which the walls are built; as far as the drawing shows, they might be brick plastered over; perhaps they are, at all events there are no indications of built masonry or brickwork, either internally or externally.

Mr. Lidiard James's "Tower Church of the Ascension, Balham Hill" (1478), and Mr. E. Sedding's "Church of St. Mary Highweek, Newton Abbot" (1490), are both examples of the usual Gothic revival church, good enough as such, but presenting nothing for special remark; and the same may be said of Mr. C. J. Blomfield's "Rood-screen, Swaffham Prior

Church" (1485), a very good and carefully finished pen drawing showing a very correct late Gothic rood-screen, but which might just as well be old work as modern; that perhaps the author may consider the best commendation, but we confess we cannot see the use of continually doing over again what has been done before.

Messrs. Bradshaw & Gass's "Wesleyan Church Buildings, Castle-street, Bolton" (1525) is a solid and rather picturesquely arranged block, with a brick gable flanked by low castellated masses of brickwork, and a large window through the centre of which rises a stone erection containing niches and terminating in a canopy; there is a certain character in the group, and there is no filigree about it. We cannot see anything specially suitable for "A Country Parish Church" in Mr. Dudley's design so named (1531); we should have rather taken it for an interior of a town church, and the colour effect of the decoration shown is not very satisfactory. Mr. Fellowes Prynne's southeast view of "St. Martin's Church, Worcester" (1546) is a well executed water-colour view of a large church, apparently (from the colour) in flint with light brown stone dressings and bands: there is no plan; the large tower with a staircase angle turret is effectively introduced on the south side of the nave, over the south door; the lofty east end with its large buttresses and the traceried window in the upper portion (leaving a mass of wall beneath it) has a solid and dignified effect; but the building between this point and the tower is a good deal cut up into gables and wants a little more repose of line. This is a large and important church, and it is a great pity it is given without a plan.

In Mr. Oliphant's "Rood and Chancel Screen, St. Mary's, Houghton" (1543) we come across a little bit of artistic originality; a wooden screen with a lower arcade in late Gothic style, and a kind of balustrade above it broken by two gilded panels of armorial bearings (rather incongruous on a rood screen, but that may not be the architect's fault); a carved Christ in the centre and two figures at the foot, also breaking the line of the balustrade. Over the head of the Christ a broad band of gilt metal forms a half-circle. This is a good and effective piece of work. Mr. Horsley's "Church of St. Chad, Longsdon" (1567), though a piece of orthodox Gothic, has individuality of architectural effect from the proportions of its tower and its low broad stone spire, which is like no other we remember. Mr. Temple Moore's "St. Wilfrid's Church, Harrogate" (1570), is a pencil drawing of an interior of a thoroughly orthodox Gothic type—archæological architecture only, and not altogether faultless in regard to perspective. A "Sketch Design for a painted Rood Screen" (1575), by Mr. Harold Gibbons, has a generally good effect and is a bold conception, but the drawing is too sketchy in execution for one to form a very good idea as to how it is worked out. Mr. Geoffry Lucas's "Competition Design for New Church, Grantham" (1576) is an exceedingly simple interior of some merit, and the exterior (1638) is better, and a picturesque piece of architecture. Mr. Mileham exhibits an interesting water-colour drawing of the "Chapel of the Ascension, Heathfield, Ascot" (1601); we presume a private chapel in a large house; it is treated with a wooden ceiling in seven cants, divided into compartments by transverse ribs decorated in colour, the compartments being sub-divided by a flat band of stencilled ornament; the whole effect is good and suitable for the purpose of the room. What are Messrs. Nicholson & Corlette's "Additions to All Souls', Hampstead," in the absence of a plan it is impossible to tell, without paying a visit to the church to see its present state. Why cannot English architects do what French architects always do in such a case—give a drawing of the existing state of the building and another of the proposed alterations? Then we should know where we were.

Mr. Marshall Mackenzie's "Design for a Domed Church" (1612), more or less reminiscent of Wren, was, if we remember right, an Academy medal student's design; it is good and correct according to the style chosen, but cold and wanting interest in detail; no plan is given. The Academy ought to require their students to exhibit plans with their designs; what sort of favour would a "Beaux-Arts" student expect who sent a perspective for exhibition without a plan? Messrs. Douglas & Minshull's "Memorial Baptistery, Buckley Church" (1621) is a very good exhibit; no plan is necessary, as one sees the whole thing; it is a coloured perspective view looking into a small chapel paved with black and white marble, and with walls and ceiling effectively decorated by painting; the font, which is shown, is also of good design.

NOTES AND SKETCHES IN SOUTHERN ITALY.—X.

LUCERA.

THE ancient Luceria was one of the most celebrated cities of Daunia. It coined money and had its own peculiar laws and customs. Allied to Rome in the Samnite wars, it was the scene of several bloody battles, in one of which, in 434 B.C., the Consul Papirius, who had besieged the city, then occupied by the Samnites, avenged the shame of the Caudine forks and liberated 600 Romans held captive in the castle. The Samnites tried to retake the city, but were defeated by the Consul Attilius, and those who escaped death were forced to pass, naked, beneath a yoke. Afterwards it became a Roman colony, and by resisting Hannibal gave so much assistance to the Republic that Livy reports praises given to it in the Senate and Comitium. Pompey massed his army here on the way to Brundusium and so to Epirus, and invited Cicero to shelter in Luceria as being a very secure place. It was the seat of one of the quæstors of Italy under Constantine, and was the metropolis of Apulia and Calabria (one of the ten provinces into which the diocese of Rome was divided). Its decline, however, commenced with the period of the Cæsars, when the colonies became provinces of the

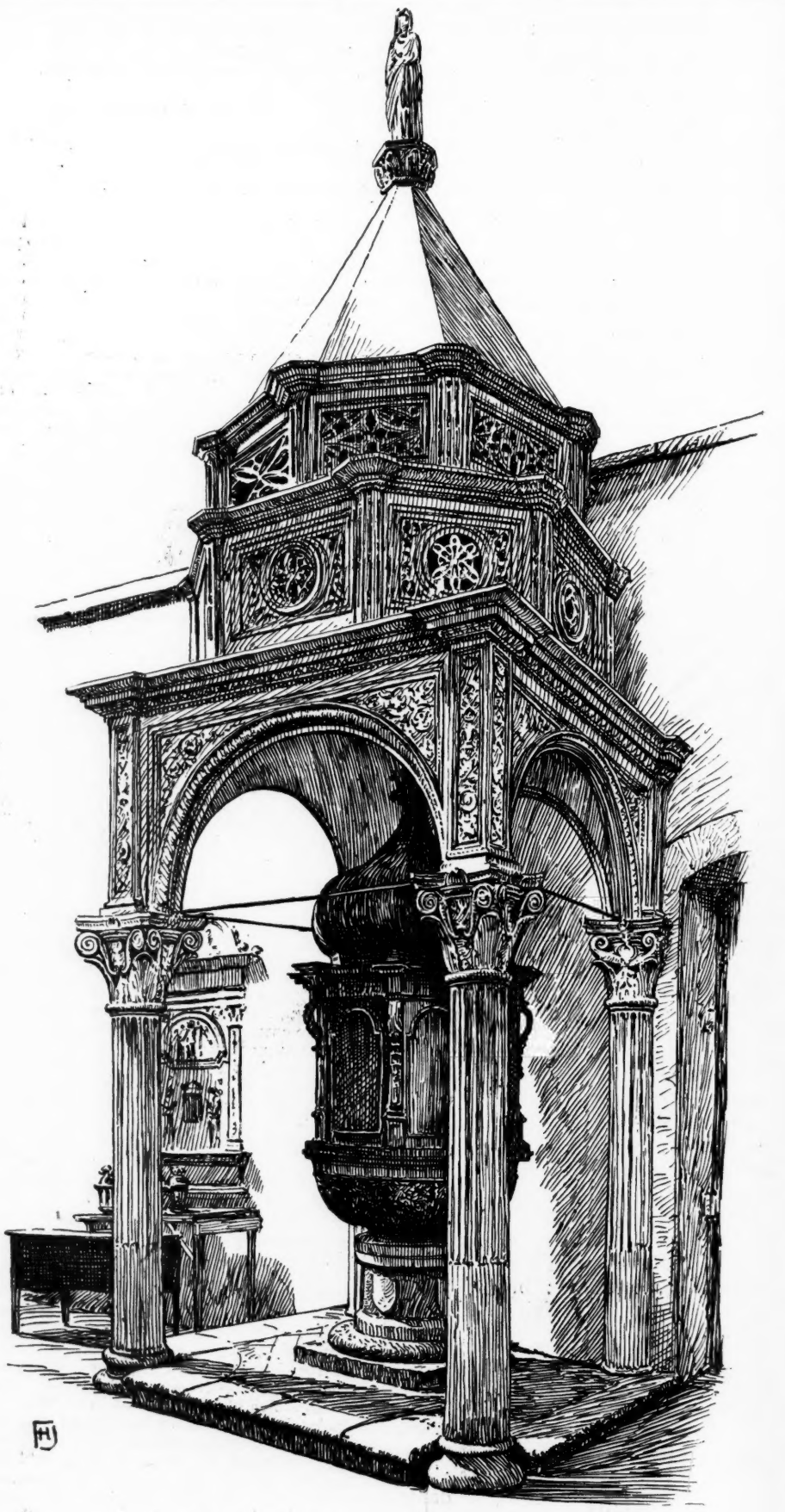


Fig. 1. *Former Ciborium, Cathedral, Lucera.*

Roman Empire. There were temples to Apollo, Ceres, Hercules, the Dioscuri, and other deities, and coins, inscriptions, mosaics, and other remains of the antique period have been found.

The city was destroyed about 612 by the Emperor Constans, but was soon rebuilt. After the Roman power decayed it formed part of the Gothic kingdom and then its possession was disputed between Byzantine and Lombard; under the latter it was the seat of the Gastaldate of Apulia. The Normans took it from the Dukes of Benevento, and Frederick II. made it the strongest bulwark of his kingdom. It has remains of ancient walls, but of its five gates only one, the Porta di Troja, of the period of Frederick II., remains. Mediæval towers show here and there, and a few cupolas of glazed tiles crowning a little hill as one comes from Foggia, or rising above fruit-trees as one stands on the vacant land which now stretches between the castle and the town. It has about 15,000 inhabitants; during the Suabian period they were estimated at 77,000. It is 18½ kilometres from Foggia and commands a territory which is rich in corn, fruits, and garden produce, and nourishes herds of cattle and flocks of sheep which produce a very fine staple of wool. Until 1806 it was the seat of administration for the two provinces of Capitanata and Molise, and its bishopric (now suffragan to Benevento) dates from the IIIrd century. The isolated rocky platform on which it lies falls suddenly, almost precipitously, beyond the castle.

Hither Frederick II. brought Saracens from Sicily after he had repressed a rising which they had attempted. He assigned the towns of Lucera, Girofalco, and Acerenza for their dwellings, but they fled back to Sicily secretly. So he brought them all to Lucera between 1239 and 1245 and called the place Lucera Saracenorum, having built the castle a few years earlier (commenced in January, 1233, according to Richard of San Germano). The garrison was the permanent nucleus of the imperial army with its light cavalry which fought with lances and poisoned darts. He found them most useful when at war with the church, and in many expeditions they sacked bishops' palaces and monasteries, for excommunications and papal anathemas were powerless weapons to use against them. The church demanded their conversion to Christianity, and Frederick allowed the Franciscans to come to Lucera as freely as they pleased, but welcomed at his table equally bishops and Saracens of distinction. The interference of the Popes in politics was found most irksome by all monarchs—a letter of Frederick's to his son-in-law Vatazes runs:—"O happy Asia! O happy monarchs of the Orient! to whom the invention of the Papacy does not provide vexations," and King Philip of France exclaimed somewhat later, "O happy Saladin! who has nothing to suffer from the doings of the Popes." These Saracens fought for Manfred, receiving him in 1254 when he fled from Aversa, and proclaiming him as their lord. Subsequently he took Foggia and drove the Cardinal legate Guglielmo Fieschi from Troja. He was called Sultan of Lucera by the priests and by Charles of Anjou. Here he left his wife, Elena of Epirus, and his sons when he went forth to the fatal field of Benevento with many Saracens in his army. After his death she fled to Trani, to take ship for Epirus, where the Castellan with less loyalty than that shown by the Saracens, gave them up to Charles. The Lucerans made a treaty with the latter by which they were to continue as his subjects under the laws and institutions of the Hohenstaufen, but when Conradin appeared in Italy their loyalty to the ancient dynasty tempted them to raise the Suabian standard again. Charles I. of Anjou determined to punish them, and for a year besieged Lucera. Pope Clement IV., having blessed the undertaking, preached a crusade against them, and sent the Host under the charge of the Abbot of Monte Cassino. On August 29, 1269, they were obliged to capitulate through famine. Charles strengthened the castle and made it the royal treasury, and a great part of the remaining walls is due to him, but he did not banish the Saracens, who served him as archers on foot and on horseback, although they had risen again in 1271 in favour of a false Conradin. In the war of the Sicilian Vespers they fought loyally for Charles. They were expelled by Charles II. in 1300 in response to the repeated demands for the extermination of the Pagans made by the Pope, and the name of the town was changed from Lucera Saracenorum to Christianorum or Civitas S. Mariæ, by which it was known until 1463. When, without any reason, the citadel was attacked and taken by storm, nearly all the warriors perished in the nine days' fighting, which lasted from the Assumption to S. Bartholomew's Day, in the streets and under the walls of the donjon. The commander, Giovanni Pipino of Barletta, was charged to complete the depopulation of the town. Those Saracens who accepted Christianity were well treated and freed from taxes; distributed among the villages of Apulia and the Capitanata, they formed separate communities and were known as "marrani" until the beginning of the XIXth century. Those who declined conversion were sold as slaves with all their property. There is a document preserved at S. Nicola, Bari, bearing date January 21, 1301, in which orders are given for the liberation of certain male and female Saracens who were detained at Barletta. They are ordered to be sent to their relation, Abd-ul-Aziz of Lucera, who had been converted and made a knight under the name of Nicholas. In the latter part of the document this Nicholas is ordered to collect Saracen artists and artificers from among the population, buying them, if necessary, and sending them well guarded to Naples. Among the artists desired were to be leather-workers and embroiderers, bow-makers and armourers, and builders who worked in stone and wood, denominated "magistros," who, no doubt, had had a hand in building many of the edifices of Frederick II.'s reign, which still extort so much admiration for their beauty.

Fig. 2. West Door, Cathedral, Lucera.

The castle stands on a spur of the hill, commanding a most extensive view, on the site of the Roman citadel, and is defended on the side of the town by a deep fosse. It has three entrances, two of them simple gates at north and south, and the third towards the town so arranged that besiegers would have to approach with the right, the undefended side, towards the flanking wall. The older part has fifteen towers, thirteen of which are oblong in plan, the remaining two, at the angles away from the town, are hexagonal. Towards the town there are two great round towers at the southern and northern corners, and seven others somewhat like bastions with a beaked front, which project from the wall. Near the entrance is a later square fort, pierced for cannon, which on one side forms part of the wall. Otherwise the interior is empty. The fortified gate resembles the Porta di Napoli at Sulmona. This gate still preserves the portcullis groove, inner and outer arch with space between, and an outwork below where the drawbridge crossed the fosse, the wall of which has fallen away disclosing an internal stair to a lower level. The drawbridge was made in 1281-2 under the direction of "Nicolaus de Constantinopolo" and "Tibaldum de Alemania, magistros ingenierios."

The walls are built of brick with stone quoins, the round towers at the angles are of ashlar, and the battering bases also. The intermediate towers have loopholes at the angles. This side towards the town is part of the rebuilding ordered by Charles I. after 1269. His two architects were Riccardo di Foggia and Pierre d'Angicourt "protomagister et eques." The other three sides are due to Frederick II., built between 1233 and 1240. One of the towers bore an inscription which is reported by Alberti as giving the date of 1271, but twenty years later work was still going on. It was nearly a perfect square in plan. In 1525 Leandro Alberti found it in ruins and a resort for beasts. We found a goatherd in possession with his flock of goats. The stone of the square fort, which probably occupied the site of the palace where the Saracen castellan lived, was used to build the modern law courts in the city.

About 1300 Charles II. promised new

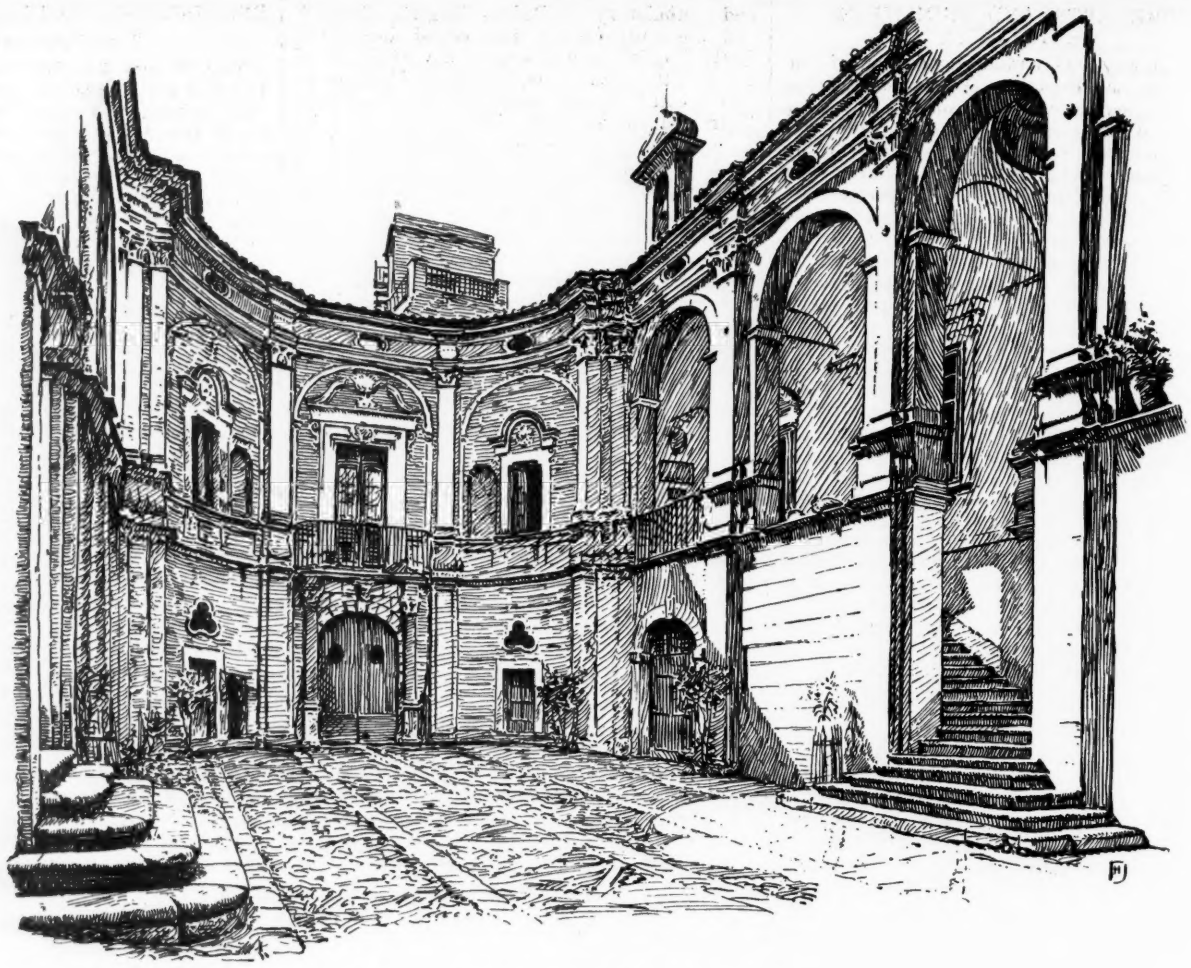


Fig. 3. Courtyard of Bishop's Palace, Lucera.

inhabitants freedom from taxes for the first ten years and the cathedral was then begun. It was consecrated in 1302, but in 1316 was still unfinished. The style is almost pure French Gothic of the XIIIth century. It has a choir, two side chapels, transepts, and nave of six bays with aisles. The choir is pentagonal, with little tower buttresses at the sides surmounted by belfries, which divide it from the flanking chapels, which are of the same shape. They are vaulted with pointed ribs and the vaults are slightly domical. The ribs spring from angle columns with low caps and octagonal abaci. The vaults are painted with subjects from the life of the Virgin. The windows are single-lights, splayed, and cusped and trefoiled in the heads. There is one in each chapel and two in the apse, between which is a larger one of two lights with a rose in the head. In the nave and aisles the windows are without tracery. At the end of the transept a similar two-light window to that of the apse occurs. The arches are pointed throughout, and those in the nave and transepts are moulded. The great arches of the nave have columns with a central ring at the height of the string beneath the apse windows. Below this are columns of *verde antico*, fourteen in number, which came from the ruins of the ancient Luceria, believed to have been used in a mosque which stood in this place during the Saracen period on the site of the original cathedral. Other columns of *cipollino* were found near during the XVIIIth century. The nave piers are oblong, with a low cap well carved with foliage and with engaged columns on which the inner mouldings fall. An attic base is common to both, following the plan. The outer arch has a hood-mould; the inner is a good deal chamfered. M. Bertaux sees great similarity between the details of this church and of S. Maximin, Var, and remarks that there these details are reversed, there are no leaves, and instead there is a vaulting shaft. The transept and nave are roofed w th wood, the aisles are vaulted. The high altar is one very large piece of marble, said to have come from Castel Fiorentino, where Frederick II. died, and to have served as his table. There are two side altars in the transepts, with colonnettes of black marble in the reredos, which, we were told, were worth their weight in gold. At the western end are two reliefs flanking the main door, against the wall, supported by the lower parts of Early Renaissance columns which belonged to the monument of Charles II. of Anjou. The only other part of this monument remaining is the effigy which is at the side of the door of the north aisle clothed in armour. The inscription on the pedestal runs: "Carolus Andeavensis. A.S. MCCC. Templum Deo et Deiparæ dicavit." One of the reliefs appears to be of the XIVth century—it is of stone and is painted, called the "Madonna della Stella"—the other is later, a "God the Father." The ancient ciborium (Fig. 1) is now at the western end with the font beneath it, and in the wall near a pretty receptacle for holy oil of architectural design and in the style of the *cinque cento*, carved in marble. It shows a curious mixture of late Gothic pierced panels of beautiful design and Early Renaissance pilasters, caps, and arches, all worked with great delicacy and beauty. There are a few indifferent pictures of some antiquity, and beneath the eastern end of the church is a crypt.

The building is of brick except the piers, arches, angle quoins, and framings of openings, which are of limestone. The façade has a slightly projecting tower to the south; at the opposite side is an octagonal turret. The three doors (Fig. 2) have stilted pointed arches with hollows and torus mouldings answering to thin colonnettes in the jambs. Above each is a gable; that on the north rests upon pilasters, that in the centre on large pillars which are not Gothic at all, while that on the south has only imposts to support the moulding. The tympana are smooth for paintings, but in the centre one is a little tabernacle for a (restored) statue of the Madonna. The material used is a dark travertine. The architrave rests on dragon corbels, and at the top of the arch is a shield with the arms of Charles II. of Anjou—lilies on a tilting shield. Above the north door is a pointed window with a projecting moulding except at the base and with a rose filling the arched part; above is a horizontal cornice with brackets or corbels, which strikes in its centre a large rose window which occupies the middle of the gable, bricked up except for a small circular moulded opening. The tower is square up to the springing of the gable of the nave; just above this level is a bracketed cornice and a dwarf wall, above which is an octagonal lantern. The square portion has three stories above the door. The first has only one little window with a round head and framing mouldings, which looks quite early. The second has windows of two lights of the same shape with a central colonnette; a panelled sinking round them goes down to the dividing string course. In the top story is a large pointed window with trefoiled angular mouldings; the upper part has a trefoil with oculus above, which is also foiled. The lantern has similar windows on all its faces, the outside mouldings very pronounced but without imposts, and the north aisle window is of the same pattern. It terminates with a brick pyramidal top with four dormers, and the turret finishes in a similar manner. When we were there shortly after Easter a branch of olive was tied to the cross which surmounts the campanile, and one rather wondered how it had been done, as there appeared to be no provision for scaling the pyramidal top. Opposite the cathedral is the bishop's palace, which has a courtyard (Fig. 3), rococo in style but rather grandiose.

The church of S. Francesco is very lofty, and consists of a single nave without side chapels. It has a pentagonal choir with a painted vault, but the nave is roofed with wood. The façade shows a pointed door with one rose window above it. Here also the altar-stone is said to have come from Castel Fiorentino.

F. H. J.

CHURCH HOUSE, BANBURY.—This building has just been completed and opened. Mr. J. S. Kimberley secured the contract for 3,540*l*., and it has been carried out from designs prepared by Mr. W. E. Mills, the architect. The large hall runs north and south, and is lighted by head lights and by the oriel window in the south front of the building. It is 62 ft. by 31 ft., excluding the platform, which is a permanent structure 31 ft. wide by 15 ft. deep. The height of the hall, which has a dome-shaped plaster ceiling, is 25 ft. 6 in. in the centre. At the south end of the hall is a gallery 14 ft. deep. At the back of the hall a suite of small apartments is procured by the adaptation of an existing cottage. These communicate with the platform of the large hall, or independently with the front of the building by a subterranean passage. The portion of the building on the right of the doorway is devoted to a room suitable for smaller meetings and other small apartments, while storage room is provided in the basement. An emergency exit has been put in near the south-west corner in order to meet the requirements of the local authorities.

HOME ARTS AND INDUSTRIES EXHIBITION.

THE twenty-first annual exhibition of the Home Arts and Industries Association is being held this week at the Royal Albert Hall. It is always an interesting exhibition, and the present one in many respects is as interesting as any that have gone before. Industries that might otherwise drop out of existence are revived, and, in some cases, with renewed vigour and good results. All intelligent handwork in the lesser arts is worthy of encouragement at a time when the machine dominates every branch of life, and the further the objects of daily and homely use are removed from mere mechanical reproductions the better for the maker and the user. One of the objects of the Association is to find employment for people in unfortunate circumstances, such, for instance, as disabled soldiers and sailors, or for cripples, work done by whom is shown in great variety at the present exhibition. What we are concerned with, however, is the value of the work done from the point of view of the handicrafts, and in this respect there is much to regret as well as to admire. A large proportion of the exhibits are work which, from our point of view, were better not done, or at any rate better not exhibited under the auspices and with the sanction of the "Arts and Industries Association." No doubt it is difficult, in out-of-the-way country districts, to obtain the skilled supervision with a knowledge of the structure of things necessary to inspire good and useful work; but where this is impossible surely models might be supplied, and occasional visits paid by some body of competent advisers. Most of the work shows talent which, rightly directed, would be useful and pleasurable to both maker and purchaser, and prevent a deplorable wastage of time and ability.

It is with satisfaction that we note the really valuable exhibits shown. First among these comes the scholarly and refined work of Mr. Edmund Hunter and his fellow-weavers. Magnificent are the design, colour, and texture of his materials. We see a revival of the class of work that was being done prior to the XVIth century, yet without the affectations of a revival. No less interesting in a more quiet and homely way are the other weaving exhibits from Haslemere. Some good embroidery comes from Langdale. In leather work the best shown is in bookbinding done at Chiswick. The Birkenhead Della Robbia Pottery is of considerable interest and capable of development. Among the humbler class of exhibits the baskets from Saxmundham and Pimlico are noticeable, and the toys from Chailey delightful. Stepney is first, as usual, in woodwork section with clever picture inlays. Among other classes of pottery to that previously mentioned are those from Birmingham and Castle Headingham.

THE SHERBORNE COMMEMORATION.

IN commemoration of the 1,200th anniversary of the founding of the town, the bishopric, and the school, a "pageant" in the form of a folk-play, written by Mr. Louis N. Parker, and dealing with the chief historical events associated with Sherborne, will be performed on June 13, 14, 15, in the ruins of the castle. In 670 Cenwalh, King of Wessex, established a house for secular canons in the Saxon Scyreburn, the *Fons clarus* of the Latin chronicles. In 704 King Ina and his consort appointed his kinsman, St. Ealdhelm, first bishop of a see which then comprised the counties of Dorset, Somerset, Wilts, Devon, and Cornwall. Around Ealdhelm's cathedral, of which only a doorway remains, incorporated with the west wall of the nave, at the end of the north aisle, arose the capital of the western kingdom. At the close of the Xth century, *temp.* Bishop Wulfin, King Æthelred displaced the canons for Benedictine monks. In or about 1075 William I. and Bishop Herman transferred the seat of the see to Old Sarum, whence it was again moved in 1217 to Salisbury. In the meantime the rebuilding of Ealdhelm's minster was begun, in 1107, by Bishop Roger of Caen, who retained the line of the former west wall.* Roger's church consisted of a nave of five bays with aisles, north and south transepts, with the square-ended Wyckham and Sepulchre chapels projecting from their east sides, a tower at the crossing of which the piers remain, a choir, and ambulatory. "Bishop Roger's Chapel" and the Lady Chapel were added during the Early English period, and in the later half of the XIVth century the Church of All Hallows was erected at the west end of the Abbey Church, dedicated to St. Mary.

In a letter printed in our columns of April 17, 1897, Mr. B. Wildham stated that he discovered from the old parish accounts that the materials of All Hallows and its tower were sold for building-stone in 1542-1551; he conjectures that the tower stood at the west end of All Hallows, a passage or porch separating the two churches, in which case the plan resembled that of Wimborne, presenting the rare combination of a central tower and one western tower. An inscribed brass in the floor of Abbot Bradford's presbytery marks the graves of Ethelbald and Ethelbert, brothers and predecessors on the throne of Alfred the Great, who, it is said, had his education at Sherborne School. By the bounty of the Digby family, of Sherborne Castle, a restoration of the abbey was carried out in the interval 1848-86. Mr. R. C. Carpenter restored the nave and transepts; Messrs. Carpenter and Ingelow repaired and strengthened the tower; and Mr. W. Slater restored the choir; the tower, which the architects described in their report (1884) as "a very poor piece of masonry" of Maperton and local stone, contains the great bell given by Wolsey. Carpenter designed the reredos of Caen stone, and Pugin the stained glass, the "Te Deum," for the south transept window. At the Suppression, the revenues being valued at 682*l.* 14s. 7d. per annum, Sir John Horsey, of Clifton Maybank, near Yeovil, as grantee of the Crown, bought the abbey for 100 marks, and sold it to the townspeople for 250*l.* as their parish church. By letters patent of Edward VI., May 13, 1550, Ealdhelm's school was refounded as the Free Grammar School, and four or five years afterwards the governors of the school acquired some of the monastic buildings on the north side of the abbey church, as well as the chapter-house, the Lady Chapel, and the adjoining Chapel of St. Mary-le-Bow. The old schoolroom, 1676, stands on the site of the abbey gatehouse; on the west side of the court are the library (formerly the guest-house) and the chapel (formerly the abbots' hall). In 1853 Carpenter restored, for classrooms and studies, what had been a silk mill appertaining to the monks; about twenty-five years ago a new schoolroom was built on the west side of the Great Court. The castle, originally built, it is believed, by Ealdhelm, became the Bishops' Palace in the time of Roger of Caen; a deep moat encompasses an extensive plateau measuring about 100 yds. by 150 yds. The ruins are those of the fortress that was dismantled in 1645 after its capture by Fairfax, and had been erected, octagonal on plan, upon elevated ground on the east side of the town. The castle, seized by King Stephen, and retained for a long period by his successors, was recovered in 1350 by Bishop Wyvil. The manor, alienated *temp.* Elizabeth, was bestowed upon Sir Walter Raleigh, who built the manor-house —his coat-arms and date "1594" are extant over a window. The house, H-shaped on plan, and having four hexagonal turrets at the ends, became Sherborne Castle, a seat of the Lords Digby, through the alienation of the manor by Carew, second son of Sir Walter Raleigh, in favour of Robert, Lord Digby, of Geashill, in the King's county, Ireland, whose descendant, Henry, was created in 1765 a peer of Great Britain as Baron Digby, of Sherborne, and in 1790 was advanced Earl Digby. The house has since been enlarged, and the turrets were connected with the wings.

* For a full description of the fabric see the *Builder* of April 3, 1897, No. XXI. of our series: "The Abbeys of Great Britain."

A VENTILATING SASH.—Messrs. W. & T. Avery (Birmingham) send us a model of their contrivance for keeping a sash window partly open for ventilation, without leaving it movable from outside. Their fastener, called "The Lorie Ventilating Fastener," consists of a metal plate fixed up the inner face of one stile of the upper sash, and a screw fixed on the lower sash, with a small turning lever by which the screw can be pressed against a point on the vertical plate so as to clamp the sash immovably. We presume it is with this object that the surface of the plate is artificially roughened by an ornament in relief, which also (quite uselessly) covers the screw lever; it would be better to have a simple series of holes in the plate, and keep the screw lever quite plain. As it is, the thing looks unworkmanlike, though in reality it is a perfectly practical device.

ENGINEERING STANDARDS COMMITTEE:

TWO NEW REPORTS.

THE Report No. 20, dealing with British standard screw threads, does not complete the work undertaken in respect of screw threads, as the Sectional Committee to whom this important subject was relegated in February, 1903, have yet to publish the conclusions derived from an extended consideration of the data collected relative to the limit gauging of screw threads and plain cylindrical surfaces. Hence the present report deals only with the form and pitch of screw threads most suitable for general engineering purposes. Having satisfied themselves by careful inquiries that the Whitworth thread is in very general employment throughout the country, and after taking evidence relative to other threads, the Committee came to the conclusion that the series of pitches originally devised by Sir Joseph Whitworth were admirably adapted for many engineering purposes and should be retained for all screws of ¼ in. diameter and upwards. This decision is one which we are quite sure will be approved by engineers and others.

Table I. of the report gives particulars of "British Standard Whitworth Screw Threads" (B.S.W.) from ¼ in. to 6 in. diameter, the values for the pitches and depths having been approximated to the fourth decimal place. The Committee recommend that all sizes above the diameter of 1⅝ in., which are not multiples of ¼ in., should not be generally used. This is an excellent suggestion, as it will tend to reduce the number of stock sizes without causing any practical inconvenience.

The investigations of the Committee had the effect of eliciting an almost unanimous expression of opinion that a series of finer pitches is very desirable for use in cases where the screw thread is liable to vibration and shock, or where additional strength is required in the core of a screw of any given diameter. With the object of meeting this evident requirement, the Committee have prepared a series of "British Standard Fine Screw Threads" (B.S.F.), in which the Whitworth form of thread has been retained. Table II. contains all necessary dimensions of the new standard threads for screws of ¼ in. to 6 in. diameter inclusive. For all screw threads of less than ¼ in. diameter the Committee have decided to accept the dimensions recommended by the British Association Small Screw Gauge Committee, particulars of these threads (B.A.) being given in Tables III. and IV.

The final report of the Committee will deal with the methods by which the accurate generation of the standard screw threads may best be performed, and with the means of securing satisfactory interchangeability between male and female screws, as well as with the question of limit gauging.

Report No. 21 deals with screw threads for iron and steel pipes, and also serves the useful purpose of specifying standard dimensions of pipes and tubes. This report is based upon a draft prepared by the representatives of the British Tube Association, and recommends that the existing form of Whitworth thread should be adopted for all pipe threads for iron or steel tubes made in accordance with the table contained in the report. Further, it is recommended that the same form of thread shall be used for pipes of copper, brass, and other materials; also, that the same pitches be adopted where the outside diameters agree and the thickness of material permits. In the simplified dimensions now settled the old Whitworth standards have been preserved as far as possible up to 2¼ in. nominal bore. In fixing gauge diameters for the larger sizes, the Committee have been influenced by consideration of the advantages to be secured by making the outside diameters of the tubes vary by even quarters of an inch. The present report also regulates the screwing of couplers and screwed connexions, and recommends that a complete set of standard gauges should be made in accordance with the sizes fixed and deposited with the Board of Trade or the National Physical Laboratory for purposes of reference.

Much trouble and inconvenience have been experienced by pipe users in the past owing to the lack of uniformity in the screw threads used by different makers of steam, gas, and water pipes, and we hope that the British standards now specified will be generally adopted by all manufacturers and insisted upon by all architects and engineers.

THE ARCHITECTURAL ASSOCIATION.

THE members' dinner of the Architectural Association was held on Thursday last week at the Criterion Restaurant, Piccadilly Circus, Mr. E. Guy Dawber, President, in the chair. There were also present amongst others Messrs. Cole A. Adams, Maurice B. Adams, Louis Ambler, A. H. Belcher, G. B. Bulmer, R. S. Balfour, J. D. Crace, Walter Cave, Max Clarke, H. Gregory Collins, A. Cox, A. O. Collard, R. Dircks, N. Forsyth, H. L. Florence, J. B. Fulton, J. S. Gibson, Leslie W. Green, H. T. Hare, Francis Hooper, Arthur Keen, W. J. Locke, G. H. Lovegrove, A. E. Munby, H. P. G. Maule, J. Murray, G. M. Nicholson, W. A. Pite, E. H. Payne, A. N. Prentice, E. A. Rickards, J. MacLaren Ross, Leonard Stokes, Hugh Stannus, H. Tanner, jun., R. H. Weymouth, and D. G. Driver, Secretary.

The loyal toasts having been honoured,

The Chairman proposed "The Royal Institute of British Architects." In doing so he said that the Institute was something in the nature of a parent to the Association, as so many members had joined the Institute. The Institute had always been very kind to the Association, and for years past had given them an annual grant in aid of the work the Association was carrying out, and had generously helped with a munificent donation to the Building Fund. The members of the Association received kindness in every way from the Institute, and especially from Mr. Locke, and the other officers, who did not fail to send students on to the Association for instruction. With the toast he coupled the name of Mr. H. T. Hare, a Vice-President of the Institute.

Mr. Hare, in response, said that the Institute was very closely associated with the Association and regarded it with the greatest sympathy and wished to give it all the support possible. The ranks of the Institute had been and, he supposed, always would be, very largely recruited from those of the Association, and the Institute would look to the Association for its future members. As they knew, there was considerable division of opinion in the ranks of the profession on certain questions just now, and it was rather doubtful with many of them whether they would be able to retain their position—the position some of them held on the fence—but, whatever might be the outcome of the present controversy, members of the Association might regard it with the greatest equanimity. Every member of the Association was an educational enthusiast, and whatever qualifications should or might be imposed in the future in order to permit an architect to practice as an architect would be directed against those unworthy members of the profession who did not wish to study, and would not affect in any way the members of the Association. Therefore the members of the Association might regard the question with the greatest equanimity. Speaking of the students' publication, "The Purple Patch," Mr. Hare said he was pleased to notice that whatever might be the capacity of the coming members of the profession in the active exercise of the practice of architecture, that, at all events, the literature of the profession was perfectly safe in the future, and that they might look forward to the most brilliant articles in the architectural publications. Possibly it might be to the advantage of the profession if a little more attention were given to the study of colour decoration. The efforts of those who had produced that interesting publication were most highly appreciated, especially by those who were honoured by being referred to in its pages.

The Chairman then proposed the toast of "The Architectural Association." The toast needed no words of his to commend it to them, he said, for the presence of such a large assembly showed the interest that was taken in the work of the Association. During the last few years they had embarked upon two large and onerous undertakings, mainly at the instigation of two former Presidents, viz., Mr. Seth-Smith and Mr. H. T. Hare. They had moved from their old premises in Marlborough-street to new ones in Tufton-street, and they had established on a very firm footing their Day School. As they must know, those two undertakings, which had proved in both cases eminently successful, had not been taken up without a large monetary outlay, and it was only within the last few weeks that they had been able to find out exactly how much these had cost up to date. The actual cost of the building, the legal expenses, and everything else in connexion, had been 10,211*l.*—an enormous amount, when they came to think of it, for the Association to have spent. A year ago they had collected the sum of 6,420*l.*, leaving, when he came into office, about 3,790*l.* to be collected. They knew that a very generous friend made an offer at the beginning of the session to give 1,000*l.* provided that the debt was wiped off by the end of this session. Well, he was sorry to say that they had not been able to entirely do that, but notwithstanding that he had just had a letter handed to him by Mr. Hooper, their Hon. Treasurer, who said that he had seen their generous friend, who, though disappointed that the outstanding liabilities had not been entirely cleared off, had consented to convert this offer into a gift. He was not entitled to divulge the name of their friend, but he knew that the whole Association would thank that friend very deeply. That reduced the debt to 2,790*l.*, and since they had sent out their appeals at the beginning of last October they had collected the sum of 1,631*l.*, leaving the debt at the present day at 1,134*l.* He thought that that was a record to be proud of, and he felt that the Association was very much indebted to the kindness of the architectural profession for the help that had been given, and all he would say was that if those members who had not contributed anything towards the Building Fund would each, during the next fortnight, send a guinea only, the Association could almost start the next session free of debt. The Association had done a work that all were proud of. Without public or official recognition of any kind they had established themselves—starting from quite a small body some sixty years ago—in the premises in Tufton-street and with a school of architecture which he felt sure was going to do a large amount of work in the future. On the other hand there was, he thought, a slight rift in the lute, and he believed that that view was shared by other members of the Association, and it was that, in their anxiety to clear off the debt and to put the educational scheme on a sound footing, they were forgetting one of the primary objects of the Association, which, he took it, was the good fellowship and social life that should be cultivated amongst the members. They did not want the Association and its members to feel that No. 18, Tufton-street was a mere cramming establishment for the Institute examinations, and they did not want to feel, with all due deference to Mr. Maule, that the Day School was the be-all and end-all of the Association. They wanted the Association to be a sort of students' club, where they could get a warm welcome, meet other students on an equal footing, and generally help forward the social side of their work—for he thought that in every life the best friends one had were the friends made in youth. Personally, his greatest friends were those he made years ago, and if, as members of the Association they held aloof one from the other, and did not take a share in the social side of the work, he felt that all their efforts in getting the Association into its present excellent position would be nullified. Much might be done to further this end, and he suggested that in the next year of his Presidency they might be able to have some social evenings and mix more one with the other than was the case now. For instance, one evening in the autumn they might have an "At Home," at which all the sketches done by the members during the summer might be exhibited and freely criticised. Another evening might be given over to students, without any President or Chairman, who could have five minutes each, say, to ventilate their grievances—and they had many, as could be seen in the "Purple Patch"! It would be an admirable thing to have some evenings like that apart from the somewhat stiff and formal general meetings. Another thing they could do was to make the premises more attractive as a club. The present appearance of the Common room—it looked indeed a "common" room—was far from satisfactory, and did not, with its few hard chairs and one or two professional building papers, attract students. They were going to improve the Common-room, and he suggested that they should take in all the foreign professional and other papers that had any bearing on their profession, and try and make the room more interesting, and a place where students could go and spend a profitable hour. Then they hoped to improve the catering. There had been one or two complaints on this score, but he must ask members to realise that they had been one year only in the new premises, and it was very difficult to get the arrangements into working order in so short a time. Still, these were points they must devote attention to if they were to make the Association attractive to the junior members. He should like to say that he thought it a pity that more did not attend the fortnightly meetings and take part in the discussions. It was very depressing to preside over a meeting and have no one, or very few, willing to speak, and he was told that the presence of the representatives of the press had something to do with that; but even if that were so he thought that some arrangement could be made with the press not to print what a speaker did not wish. They wanted healthy discussion—not prepared speeches, which had the result of taking the life out of a meeting. The Association had a great past, and it rested with the members to see that it had an equally great future. If they looked around they would find that nearly all the leading architects—the men who were doing or had done the most brilliant work, and work which would last—were, or had been, members of the Association, and that was a thing which the Association ought to be proud of. Hardly a week passed without some member gaining some honour or distinction, and on either side of him he had a number of those who had won such, and only last week they had the pleasure of congratulating their friend Mr. W. A. Pite on a great success, and what he had done was what many others would do. In conclusion, the Chairman thanked the members for electing him for a second year of office, and the Council and Secretary and others for the help they had rendered him during his occupancy of a position which was no sinecure. With the toast he coupled the name of Mr. Walter Cave.

Mr. Cave, in response, said it was a matter for congratulation that Mr. Dawber was acting as President again, and he did not think it was sufficiently well-known how much trouble Mr. Dawber had taken on behalf of the Association during his past year of office; the fact that the debt had been reduced to 1,100*l.* was largely due to their President's efforts. Mr. Dawber had dwelt on the social side of the work of the Association, and there was another side, which was, perhaps, of still greater importance, and that was its educational side, *i.e.*, the schools connected with the Association. He believed—and there were many others who believed the same—that the work in the schools was turning out some of the best of the younger men of the day, and he felt sure that in the future they would look back to the foundation of their architectural teaching system as being one of the most successful and one of the best-arranged of the modern courses of instruction in architecture, and it was a matter on which the Association might well congratulate itself. The importance of a thorough grounding in architectural work before students entered offices was very great, and anyone who had had pupils under him would agree that this system of training was the secret of the proper bringing up of architects. It was satisfactory to see so many students there that evening, and he thought the vitality and enthusiasm of the Association were quite remarkable in such a large body—some 1,600 of all ages. He hoped that many of them were looking forward to do brilliant things in their prime—for the prime of life, he hoped, would come to all, when each would have his life's chance. He believed that the chance came to all, though we did not make use of it always when it came, but the way for architectural students to be ready for their chance when it came was by hard work, so as to get a thorough knowledge of their profession. He supposed there was no place in the world where there was so much architectural work being done as in London at the present day. An American visitor, the other day, on being shown London and asked his opinion of it, said, "Yes, it will be quite a nice place when finished." That was just it. London was being rebuilt, and it was to be hoped that there was work for all, and that the students of to-day would get their chance later on. Of course, as the amount of work increased so the number of architects increased, and that reminded him that a friend of his told him that he did not read the daily papers but he always looked at them to see

if an architect had died. It was from that point of view, *i.e.*, preparation for the chance when it came, that he considered the Association was doing so much for students. The number in the schools had increased, and the work they were doing, as could be seen by their drawings, was of a very high order. The Association was going on on right lines, and he wished it every success in the future.

Mr. A. O. Collard then briefly proposed the toast of "The Visitors," coupled with the name of Mr. P. L. Forbes, who replied, remarking that he thought architects were too modest. A new building might be going up, and it was generally easy to get the names of everyone connected with it except the architect.

The Chairman then proposed the last toast, *i.e.*, "The Secretary." No one, he said, took a deeper interest in the work of the Association than did Mr. Driver, and no one had done more to further the educational scheme.

The toast was received with musical honours.

Mr. Driver suitably replied, remarking that he was glad the Association had flourished, was flourishing, and that it had every prospect of continuing to do so.

The proceedings soon afterwards terminated.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Mr. E. A. Cornwall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Camberwell Borough Council 1,431*l.* for formation of street; Poplar Borough Council 3,229*l.* for buildings at depot and gardener's cottage; Wandsworth Borough Council 1,250*l.* for extension of Coronation-gardens, and Woolwich Borough Council 9,287*l.* for electric lighting purposes. Sanction was also given to the following proposed loans: Paddington Borough Council 8,000*l.* for paving works, and Woolwich Borough Council 10,221*l.* for street improvement.

Safety of Theatres.—The Council resumed the debate on the annual estimates, and considered the several votes seriatim.

On the vote of 5,345*l.* for surveying theatres and music-halls,

Mr. Edward Collins complained that this sum was used by the Theatres and Music Halls Committee mainly for the purpose of harassing managers of places of public entertainment, and he moved the reduction of the vote by 5,000*l.*

Sir T. Brooke-Hitching seconded the amendment.

Colonel Rotten said he did not consider that the sum was too large to ensure the proper protection of the public from fire dangers.

Sir Algernon West declared it was the purest fiction to say that they were harassing the proprietors of the theatres and music-halls. It was a significant fact that during the whole of the time the Council had had the control of the places of entertainment they had not had a single fire in a theatre.

Mr. W. Bailey said that undoubtedly in the past it was a fact that theatrical managers in London were considerably harassed by the absurd requirements of the authorities, but during the last ten years they recognised fully that there had been a wonderful improvement. He, however, complained of the ignorance of some of the Council's inspectors, for in his own theatre one of them insisted on an oil lamp being placed in a position where it was absolutely useless, and was never kept alight after the first week, while another inspector compelled him to shift a door-mat 16 in.

Mr. John Burns said on an average 2,000,000 people attended places of amusement in London every week, and there were about 350 of these places, and yet in seventeen years they had never had a fire, a personal injury, or any serious damage to licensed property.

On the amendment being put, only one member voted for it, and the vote was passed.

The Tottenham Estate.—Upon the vote of 42,490*l.* on account of the housing of the working classes,

Sir R. M. Beachcroft begged the Council to reconsider its position in regard to the Tottenham Estate, upon which it was proposed to spend 2,000,000*l.* in providing houses for the working classes. Up to the present this new town had been a ghastly failure, only about 35 houses being occupied. The people of London would not live in the houses; even people of Tottenham would not become tenants. Everyone in the neighbourhood declared the experiment to be doomed to failure. He thought that they should cut their loss, especially as the Council were losing 1,000*l.* a year on Carrington lodging-house, notwithstanding that the Rowton House Company earned 5 per cent. and put away a good sum annually for depreciation.

Mr. W. W. Bruce, late Chairman of the Committee, said that the Tottenham Estate was a very valuable piece of building land. The Council bought it before it was ripe, but they had simply to wait, like a land speculator usually did, and allow the land to ripen, adding the interest to the ultimate capital value. So soon as the tube railway was constructed the land would become ready for development, and be worth a good deal more than they gave for it. Land all around was being built upon, and all the indications pointed to a successful development in the near future. He was bound, however, to say that municipal architects had much too expensive ideas for municipal cottages, too much being spent upon the structure of cottages which had to be let at cheap rents. He was also bound to confess that the interest and sinking fund on the capital expenditure of the estate was being charged to the rates.

Colonel Rotton objected to going on further with the Tottenham Estate. The best thing they could do was to sell the land at the enhanced value which Mr. Bruce said it now possessed.

Mr. Sears, Chairman of the Housing Committee, denied that the estate was a failure. The prospects were bright, and he hoped to bring up a satisfactory report next week in regard to it. The estimated surplus this year on the Council's housing schemes was 2,000*l.* Above all, the Council's housing policy had materially reduced the death-rate.

The estimate was adopted.

Finally the whole of the estimates, providing for a total expenditure of 4,494,500*l.*, were passed.

Proposals for provision of additional school accommodation.—The Finance Committee reported as follows:—

"The Education Committee have informed us of their intention to recommend the Council to give public notice under section 8 (1) and (2) of the Education Act, 1902, of its intention:—

(*a*) To provide accommodation for 1,148 children at the permanent school to be erected in Mitcham-lane instead of for 900 children as sanctioned by the Board of Education.

(*b*) To erect a new school for about 1,100 children upon land in possession of the Council adjoining the existing Southfield school.

(*c*) To acquire a site for future school requirements in the district of Southfields."

The Education Committee recommended, and it was agreed:—

(*a*) That the estimate of 3,241*l.*, submitted by the Finance Committee in respect of the erection of a school for mentally defective boys, at Beaufort House, Fulham, be approved.

(*b*) That a school for the accommodation of 60 elder mentally defective boys be erected on the Beaufort House site (Fulham); that expenditure not exceeding 3,447*l.* be sanctioned for the purpose; and that, subject to the Board of Education approving the finished plans, the work be done by Messrs. Stimpson & Co., the contractors who recently built the new school on the same site as an addition to their contract

Rotherhithe Tunnel: Reconstruction of Railway Bridge.—The following recommendation of the Bridges Committee was agreed to:—

"That the estimate of 10,000*l.*, submitted by the Finance Committee, be approved; that expenditure on capital account not exceeding that amount be sanctioned for the reconstruction of the bridge carrying the London and Blackwall Railway over Horseferry-branch-road in connexion with the construction of Rotherhithe Tunnel; that an agreement to be prepared by the Council's solicitor be entered into with the Great Eastern Railway Company for the execution of the work under the direct supervision of the company's engineer. . . ."

Lambeth Bridge.—The following recommendation of the Committee was agreed to:—

That no vehicles where the weight of the vehicle and the load combined is 2½ tons or more shall be allowed to cross, or in any way use, Lambeth Bridge; that all traffic using the bridge be required to proceed at a walking pace; and that such other restrictions be imposed upon the use of the bridge as may be considered necessary for the safety of the public.

Vauxhall Bridge.—In reply to a question, Mr. Straus said that much better progress was now being made with the Vauxhall Bridge works.

Tramways.—The following recommendations of the Highways Committee were agreed to:—

(*a*) That the estimate of expenditure on capital account of 5,513*l.* (being 4,613*l.* for roadwork and platelaying, etc., and 900*l.* for overhead equipment), submitted by the Finance Committee, be approved in respect of the construction, under the powers conferred by the London County Council (Tramways and Improvements) Act, 1901, of the tramways in Archway-road, Highgate, between the Archway Tavern and the county boundary at Highgate-archway.

(*b*) That an agreement be entered into between the Council on the one hand and the County Council of Middlesex and the Metropolitan Electric Tramways, Limited, on the other hand, embodying the following terms:—

(i.) That the Council shall construct, at its own expense, a double line of tramways in Archway-road, Highgate, between the Archway Tavern and the county boundary at Highgate-archway, to link up with the light railways of the County Council of Middlesex at the county boundary.

(ii.) That the Council shall provide the necessary overhead equipment for the lines.

(iii.) That the tramways shall be leased by the Council to the Metropolitan Electric Tramways, Limited, with the consent of the County Council of Middlesex, for a period of three years.

(iv.) That the lessees shall covenant to repair and maintain, and if necessary to renew, the lines and overhead equipment to the satisfaction of the Council.

(v.) That the rent to be paid to the Council in respect of the tramways shall be at the rate of 1,500*l.* for the first year, 2,000*l.* for the second year, and 2,500*l.* for the third year.

(vi.) That the paving of the tramway tracks shall be of such a material as may be agreed upon between the Council and the County Council of Middlesex.

(vii.) That the rolling-stock and the electrical power necessary for working the tramways shall be provided by the Metropolitan Electric Tramways, Limited.

(*c*) That the Highways Committee do settle the precise terms of the agreement referred to in the foregoing resolution, so far as it affects the Council; and that the seal of the Council be affixed thereto when ready.

Brixton Station and Herne Hill Sub-station.—The Fire Brigade Committee reported as follows:—

"The Council, on April 18, 1905, decided that, in the event of the Works Committee being prepared to undertake the work at the amount of the architect's estimates, the work of erecting the new fire-station at Brixton, in substitution for the existing station in Ferndale-road, and the Herne Hill sub-station, should be executed by the Council without the intervention of a contractor. The Works Committee have now agreed to undertake the work in each case, at the amount of the architect's estimates—viz., 11,250*l.* and 7,775*l.*, respectively."

Cannon-street Fire-station.—It was also agreed that the freehold of No. 32, Cannon-street and No. 86, Queen Victoria-street be acquired for 15,850*l.*; that the payment of 108*l.* 18*s.* 5*d.*, the umpire's fees, be agreed to.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Strand.—The rebuilding of the Quadrant, Regent-street, with the front portions of the upper floors of the proposed buildings carried over the entrances to Air-street on either side of Regent-street (Mr. R. Norman Shaw, R.A., for Mr. J. F. F. Horner, a Commissioner of His Majesty's Woods and Forests).—Consent.

Walworth.—Buildings upon the site of Nos. 75, 77, 79, 81, and 83, Westmoreland-road, Walworth, abutting also upon Doctor-street and Portland-street (Messrs. Cluttons for the Ecclesiastical Commissioners and Lord Llangattock).—Consent.

Wandsworth.—That an order be issued to Messrs. Holloway Brothers sanctioning the formation or laying-out of new streets for carriage traffic on the Magdalen Park estate to lead out of Garratt-lane and Burntwood-lane, Wandsworth.—Agreed.

Lines of Frontage and Projections.

Paddington, North.—Retention of projecting porches, balconies, and bay-windows at Delaware Mansions, Delaware-road, Elgin-avenue, Paddington (Mr. W. A. Rabson for Mr. W. F. Cave).—Consent.

Wandsworth.—A building on the eastern side of Rostella-road, Wandsworth, to abut also upon the western side of Thurso-street (Mr. A. Dean).—Consent.

Hammersmith.—Buildings on the site of Nos. 156 and 158, Uxbridge-road, Hammersmith (Mr. E. J. Clayton).—Consent.

Hammersmith.—That the Council do make no order on the further application of Mr. A. W. Davies & Co., on behalf of Messrs. Levy & Co., for consent to the erection of a projecting illuminated sign at No. 22A, King-street, Hammersmith.—Agreed.

Camberwell, North.†—A house on the north side of Calais-street, Camberwell, to abut also upon the east side of Halsmere-road (Mr. P. Arundell).—Refused.

Clapham.†—A one-story building at the rear of No. 253, Lavender-hill, Clapham, to abut upon Altenburgh-gardens (Mr. E. Evans).—Refused.

Paddington, North.†—One-story shops in front of Nos. 435 and 437, Edgware-road,

Paddington (Messrs. Gardiner & Theobald for Meux's Brewery Company, Ltd.).—Refused.

Paddington, North.†—One-story shops in front of Nos. 439 to 451 (odd numbers only), Edgware-road, to abut also upon Maida-hill West (Messrs. Boehmer & Gibbs for Mr. W. Hirsch).—Refused.

Paddington, North.†—One-story shops in front of Nos. 431 and 433, Edgware-road, Paddington, with external walls at less than the prescribed distance from the centre of the roadway of Crompton-street (Messrs. Gardiner & Theobald for Messrs. Matthews & Son, Ltd.).—Refused.

Line of Frontage and Construction.

Paddington, North.—A shed at No. 1, Clifton-road, Paddington, to abut upon Maida-vale (Messrs. Parfitt & Co. for the Express Dairy Company, Ltd.).—Refused.

Deviation from Certified Plans.

Strand.—Deviations from the plan certified by the District Surveyor, so far as relates to the proposed rebuilding of No. 32, Rupert-street, and No. 6, Upper Rupert-street, St. James (Mr. R. H. Kerr for Mr. Neve).—Consent.

St. George, Hanover-square.—A modification of the provisions of section 41 of the Act, so far as relates to the proposed erection upon the site of Nos. 23 and 24, Bolton-street, of an addition to the Curzon Hotel, Curzon-street, Mayfair (Mr. S. Harwath).—Consent.

Space at Rear.

Poplar.—An additional story to the Wesleyan Seamen's Mission Building, Jeremiah-street, East India Dock-road (Messrs. Gordon & Gunton for the trustees of the Seamen's Mission).—Consent.

Addition to Building.

Paddington, South.—The erection on the site of Nos. 3, 5, 7, 8, 9, and 10, Leinster-yard, Hereford-road, Bayswater, of an addition to Nos. 129 and 131, Westbourne-grove, and Nos. 2A, 4A, and 5A, Chepstow-place (Mr. E. J. Stubbs for Messrs. Bradley & Sons).—Consent.

The recommendations marked † are contrary to the views of the local authority.

ARCHITECTURAL SOCIETIES.

THE EDINBURGH ARCHITECTURAL ASSOCIATION.—The members of the Edinburgh Architectural Association paid a visit on Saturday last to Dundee. The chief buildings on the programme were the Town House, Old Custom House, Royal Bank Buildings, St. Paul's Episcopal Church, and the steeple of St. Mary's Tower. The new offices of the *Dundee Courier* were also visited, and the "ferro-concrete" basement and pile foundations of this building excited much interest. In the afternoon the party was entertained to tea by Mr. P. H. Thoms, President of the Dundee Institute, and at the conclusion of the visit the members dined together.

ARCHITECTURAL ASSOCIATION CAMERA AND CYCLING CLUB.—An excursion to Belgium has been arranged, leaving Charing-cross station on Friday, June 9, by the 9.0 p.m. train, arriving at Bruges 4.3 a.m. The headquarters will be at the Hotel Windsor, Bruges. A visit to Ypres, *viâ* Thourout, will be made on the Sunday. All members of the Architectural Association and their friends (ladies and gentlemen) will be welcomed. Further particulars can be obtained from the Hon. Secretary, Mr. Gilbert H. Lovegrove.

ARCHÆOLOGICAL SOCIETIES.

BIRMINGHAM ARCHÆOLOGICAL SOCIETY.—This Society visited Wootton Wawen on the 20th inst., when nearly 200 ladies and gentlemen travelled in a special train of saloon carriages to Henley-in-Arden. Carriages were then taken to the old parish church of Wootton Wawen, where the Rev. F. T. Bramston (vicar) pointed out some of the interesting features of the building. Dating back to the period of the Saxon heptarchy, the church has passed through many vicissitudes, and each succeeding century has added something to the fabric. Some of the additions and alterations have seriously interfered with the symmetry of the structure, but they afford a rare opportunity of tracing the development of English architecture. The church contains examples of Saxon, Norman, Early English, and XIVth and XVth century work. The centre of interest is the Saxon tower with its four massive square pillars and remarkably small round arches. The original structure is almost surrounded by later additions. On the east side is a XIVth century chancel, and the south aisle has also been extended eastwards to form a chantry chapel. Here a stone slab marks the burial-place of William Somerville, the poet who wrote "The Chase." The church also contains some fine monuments to the Smythes, Harewells, and Carringtons of Wootton Wawen Hall. Their historic mansion is within a stone's throw of the church. The house is a very handsome and commodious one in the Italian style, and it stands upon an extensive and picturesque estate. Lord Francis Carrington rebuilt the hall in 1687. Tradition says that Sir Christopher Wren prepared the plans, and there is good reason for believing that Grinling Gibbons was responsible for the beautiful carving of the cornices. It is certain that Wren and Gibbons were concerned together in similar work at Arbury, and that Sir Christopher was living in Warwickshire when the building was commenced, though he did not buy Wroxall till 1713. The Wren family remained for 150 years at Wroxall, which is six miles above Wootton Wawen on the stream that flows past the hall into the River Alne. The present owner of the hall has spent a great deal of money in restoring the fabric, renovating the interior and improving the estate. Mr. and Mrs. Capewell Hughes received their guests in the entrance hall, which has been used as a drawing-room for the last hundred years, but has now been restored to its original form, and adorned with beautiful frescoes depicting scenes from Shakespeare's "Much Ado About Nothing," by Mr. F. W. Davis, a former student of the Birmingham School of Art. Under the direction of Mr. John Humpries, the organiser of the Society's excursions, the party passed through the drawing-room, which is rich in tapestries, to the mezzotint galleries, where they had a glimpse of the study, in the oldest portion of the house, which contains several secretescapements. The house has been in Roman Catholic hands from the time of the Reformation, and there remains abundant evidence of its adaptation for concealing priests in time of persecution. After admiring the oak panelling, carved with the Carrington crest, in the morning-room, the archæologists ascended the staircase, at the top of which they noted the entrance to the priests' apartments. Descending to the kitchens, traces of another chapel were pointed out. Below this they came to the old well, the crypt cellar, and the subterranean passage, which is said to branch into two, one outlet being near the church and the other in the village. It is a well-preserved brick tunnel, but is flooded with rain-water. Passing through the billiard-room, the visitors saw the minstrel gallery, and in the dining-room they noticed the frames of family pews, indicating that this room was used as a private chapel a hundred years ago. In the music-room Sir Benjamin Stone delivered a short address, and referred to the hall as one of the most interesting country seats in Warwickshire. The history of the hall was, he said, intimately associated with that of the parish church and the ruined priory that could still be traced on the estate. Probably both ecclesiastical buildings grew out of a hermit's cell established by a missionary from one of the older monasteries on the Continent. The history of the priory could be traced back to the year 850, when it received a grant from Ethelbald, King of Mercia. Mr. J. A. Cossins (President of the Society) expressed the hearty thanks of the company to their host and hostess. He also referred to the fact that the excursion was the hundredth in the annals of the Society, and the first of the present season. After tea the visitors strolled through the walled garden. Shortly after seven o'clock the archæologists returned to Birmingham.—*Birmingham Post.*

COURT OF COMMON COUNCIL.

THE usual fortnightly meeting of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Street Improvements.—On the recommendation of the Improvements and Finance Committee it was decided not to effect improvements in connexion with the pulling down of the undermentioned premises. Nos. 143, 144, and 150, Fleet-street; Nos. 58 to 61, Fetter-lane, and Bartlett's-passage; No. 21, Thavies-inn; Church Entry, Carter-lane; No. 66, Farringdon-street; and No. 91, Minories. On the recommendation of the Streets Committee, it was agreed to carry out certain paving works at the corner of Gresham-street and Princes-street, at a cost of 500*l.*

No. 17, Fleet-street.—The Lord Mayor laid before the Court a letter from Messrs. Barclay & Co., Ltd., relative to the premises, No. 17, Fleet-street, protesting, now that the front had been entirely demolished, at its re-erection on its former site. After a short discussion the matter was referred to the City Lands Committee.

The Proposed Thames Barrage.—On the recommendation of the Special Committee on the Port of London, it was agreed to make a representation to the Government in favour of the appointment by a Commission or Departmental Committee to inquire into the proposal to construct a barrage across the Thames at Gravesend.

Having transacted other business, the Court adjourned.

WESTMINSTER CITY COUNCIL.

THE usual fortnightly meeting of this Council was held on Thursday last week at the City Hall, Charing Cross-road.

Alderman Everett presented a petition, signed by 243 tradesmen and residents in the St. John's ward, urging the Council to use their influence with the London County Council for the purpose of preventing any further evictions under the Millbank Improvement Scheme until the land is required or before some definite scheme is submitted. The petition was received and referred to the Housing Committee.

Lady Sanitary Inspector.—A letter was received from the Local Government Board sanctioning the appointment of Miss C. W. Byrne as a sanitary inspector under the Council.

Fixing of Flushing Hydrants.—On the recommendation of the Highways Committee it was agreed to fix 100 flushing hydrants at various points in the City, at an estimated cost of 20*l.* per hydrant.

The Coliseum "Sky-sign."—The Law and Parliamentary Committee reported having communicated with the London County Council in regard to the revolving sign on the tower of the Coliseum, and having received a reply from that authority that neither the tower nor the revolving sign was showing on any of the plans of the premises in question which were approved by them, the Committee reported that, under the circumstances, they had given directions for notice to be served on the London Coliseum, Ltd., to remove the sign, and that, failing compliance with that notice, they should take legal proceedings for the removal of the structure, with a view to obtaining a magistrate's decision as to whether the sign was a "sky-sign" within the meaning of the London Building Act, 1894.

London Squares and Enclosures (Preservation) Bill.—The same Committee reported having received communications from the London County Council asking the City Council, in view of the fact that they were now the only petitioners against the Bill, whether they would withdraw their petition against the measure. Having regard to the fact that the Council were strongly of opinion that, if the places scheduled in the Bill were taken over as open spaces, the duty and expense of maintaining them should devolve upon the council of the borough in which they were situated, the Committee stated that they had informed the London County Council that they could not see their way to withdrawing their petition. The action of the Committee was approved.

"Midget" Arc Lamps for Public Lighting.—The Works Committee reported having given instructions for the placing of "Midget" arc lamps in various parts of the Parish of St. George, Hanover-square. The Westminster Electric Supply Company, who recently placed one of the lamps, as an experiment in the Buckingham Palace-road, have made an offer to the Council to supply and maintain lamps of this type at the rate of 7*l.* 10s. per annum.

The Paving of Great Smith-street.—The same Committee reported that they had informed Messrs. Hollams, Sons, & Co., who had written to them on behalf of the Acme Flooring and Paving Company in regard to a dispute between that firm and the Council as to the payment for certain paving works in Great Smith-street, that, under the terms of the contract, the City Engineer was the sole arbitrator, and that arrangements were being made to appoint a day to hear and determine the question. The sums involved amount to 493*l.*

Proposed New Street.—On the recommendation of the Committee, the Council agreed not to sanction the closing of a portion of Buckingham Cottage in connexion with the proposed formation of a new street from Francis-street to Coburg-row.

Supply of Granite.—The Committee further reported that they had agreed to purchase for the Guardians of St. George's Union 100 tons of 2½-in. broken Guernsey granite at 8s. 6d. per ton, the Council to undertake cartage.

Maintenance of Paving Round Pavement Lights.—It was agreed, on the recommendation of the Committee, "That, in cases where the

Council consent to the fixing of pavement lights, such consent shall be subject to a condition that the lights and surrounding kerbs shall be kept in repair by the owner.

Correspondence.

"URGENT, ETC., R.I.B.A. ELECTIONS."

SIR,—At this juncture, to judge by the flood of circulars and letters which are appearing, the profession seem in danger of losing their sense of proportion over the proposed list of members to constitute the new Council of the R.I.B.A.

No vote should be given on the mere inclination for a particular form defining our legal status, but, rather, for that man who has proved by his executed works or other evidence (1) that he is an artist; (2) that he is an architect; (3) that he is a good man of business; and (4) that he can and will give the necessary time to the work.

If the Institute is to be rushed just now—of which indications are not wanting—it will prove the greatest blow ever struck in these isles at the oldest and first among the fine arts.

PHILIP A. ROBSON.

RE FELLOWSHIP, R.I.B.A.

SIR,—I notice that, in the current Supplement of the Journal of the R.I.B.A., there is a long string of names proposed for election to the Fellowship without previously having passed the examination. In the same Supplement is the announcement that the Summer examinations are to be held on a certain date.

On the one hand, men are being elected in cartloads, so to speak, without any justification whatever; and, on the other hand, the Council are inviting young men to take three examinations, at much trouble and expense, only to obtain the same end. This position of affairs is absurd on the face of it; either the examinations should be abolished, and election take place in the old-fashioned way, or the whole of the members should qualify for membership by passing the examination, exception only being made in the case of very distinguished men.

It appears to be the easiest thing in the world to get the necessary proposers for election to Fellowship. Indeed, two architects were recently proposed who had failed at the Intermediate examination, neither of them making a further attempt. In other words, the Council refused to enrol them as students of the Institute. Having, in the meantime, been in practice seven years, they now found members of the Council to nominate them for *Fellowship* of that Institute to which they were refused admission as students but a few years ago. It seems quite incredible, but these are facts.

The first thing the newly-elected Council should do is to put a curb on this multitude of reckless proposers. If they are indifferent, I think there is a sufficiently strong body of opinion in the country in favour of some such action to enable us to arrive at the same end in another way.

T. DENTON BROOKS.

SIR,—The protest from the Associates of Leeds, published in your last issue, will probably cause little surprise.

The wonder rather is that such a protest has not before now been issued by the London Associates, to whom, I take it, the appeal is more directly made.

What is the reason of the Council of the R.I.B.A. recommending candidates for election to Fellowship who have not passed the examinations, and who should, in all fairness, be compelled to pass such examinations?

Members are entitled to ask this question after the recent voting by papers, which seemed to prove that the action of the Council was opposed to the wishes of the majority of the members of the Institute. It appears to me that this appeal to the Associates in London should be responded to, with a view of reforming the present system of electing Fellows.

H. HARRINGTON.

R.I.B.A. STUDENTS.

SIR,—In your issue of May 13 appears a letter from "Student, R.I.B.A.," which may somewhat astonish the younger members of the profession, and ought not to pass unnoticed. When so many new members of the R.I.B.A. are elected without any test whatever, what wonder that one does hear of students whose ardour for real hard work is damped thereby?

The letter referred to is liable to give other students a very exaggerated idea of the amount of work necessary for preparation for the Institute examinations. Surely there are not many students who find it necessary, after working for the Intermediate examination, to "take a rest for a year or two," or even to "take a continental tour," and students, as a rule, do not drift into "a budding practice" after passing the Intermediate. In my humble opinion, the fact that so large a number of students remain on the register without proceeding to the Final examination is due, in great measure, to the lack of enthusiasm and that necessary love of real hard work on the part of the students themselves. I would commend to students' consideration the following facts:—

(1) That it is possible for a man of average ability to prepare for, and be successful at, the Intermediate examination by twelve months' hard work after office hours.

(2) That the same man can prepare for, and be successful at, the Final examination two years after passing the Intermediate. If he works, say, eight hours for his principal, it will be necessary for him to work on an average an extra five hours per day for eighteen months previous to the Final on examination work, and the necessary evidences of study.

Therefore, I am of the opinion that the most excellent three-stage examination, as at present established, is far better than the two-stage examination suggested by "Student," and that the amount of time necessary for preparation does not put the test beyond the reach of any man of ordinary ability.

N. C., Assoc.R.I.B.A.

CONCRETE PUGGING FOR FLOORS.

SIR,—I am very interested in the letter of your correspondents, Messrs. Holman & Goodrham, with reference to the suggestion as to the cast concrete slabs in lieu of the wet concrete pugging between joists of floor. I am not so certain that it is common knowledge that the placing of wet concrete between wooden joists of floor is a dangerous practice. It all depends upon whether the joists are of sound timber or sappy, and the time this practice has been in vogue is too short to enable us to speak definitely.

From the experience already obtained by the British Fire Prevention Committee I am at present distinctly of opinion that the proposed method of dry slabs supported by angle-iron is not a fire-resisting floor, for this reason—that the fire creeping up the sides of the joists would make the angle-iron and spikes red hot, which would cause it to fall away from the joists, and down would come the slabs of concrete on the heads of the unfortunate firemen who, perhaps, might be beneath.

The proof of the pudding is in the eating, and I will make an offer to Messrs. Holman & Goodrham that we, of the British Fire Prevention Committee, will give them the use of a hut, 20 ft. by 10 ft., provide the fuel and other plant complete, for a test at our testing-station, if they will provide and fix complete a floor on exactly the same lines as that erected by them at Darnley-road, Mare-street, Hackney.

ELLIS MARSLAND,
Hon. Sec. British Fire Prevention Committee.

1, Waterloo-place,
Pall Mall, S.W.

SIR,—The letter in last week's *Builder*, p. 543, on this subject from Messrs. Holman & Goodrham, architects, refers to a block of buildings at the corner of Mare-street and Darnley-road, Hackney, which is in my district as District Surveyor, and I think it right to state that the floor, as executed, was not wholly approved by myself, as District Surveyor, or by the District Surveyors' Association, who several times discussed the matter.

The objection to the floor as shown was that, in a serious fire, the lower part of the wooden joists would probably be destroyed by the fire, which would extend to the iron supports of the blocks, cause them to drop out, and the blocks with them. There was some correspondence with the London County Council about the matter, at the request of the architects, and the suggestion was made through the Superintending Architect "that the fillets should be in the centre of the thickness of the blocks instead of flush with the underside, the blocks being slid into position, and the last one cast in situ." This would have met the objection named above, and both the builder and the architects were at once informed of it; but it was not carried out, and, as there is at present no specific rule about the pugging, the Council were not prepared to give evidence in the Law Courts in support of their suggestion; meanwhile, the proposed fire-resisting clauses of the London Building Act (Amendment), 1905, were published, requiring the supports to the pugging to be secured to the sides of the joists in a central position in the depth of the concrete, and as this was just what had been asked for in this case, the matter was brought before the District Surveyors' Association again, who came to the conclusion (with which I agreed) that it was not desirable to take the case to the Law Courts till definite rules had been enacted; and hence I think it most important in the new fire-resisting clauses that there should be definite rules on this point, and that those put down by the Council would be most valuable in this case for the prevention of danger in a serious fire.

With regard to the difficulty named by Messrs. Holman & Goodrham about the danger of dry rot in a floor of this description, I think this may occur whether concrete is pugged in or put in in blocks and grouted in; and for this reason it is my opinion, and that of many district surveyors, that wooden joists should not be allowed at all in a fire-resisting floor in a *new* building, but only as a temporary measure in an old building where the joists are already there and could not be removed without great expense to the owner; and this was amongst the suggestions of the District Surveyors' Association, in notes prepared at the request of the London County Council in connexion with the proposed Amendment Bill of 1903.

ALEXANDER PAYNE,
Architect and District Surveyor.

Illustrations.

KING'S COLLEGE HOSPITAL.

WE publish to-day the plan of the new hospital, and a perspective view of the administration and nursing block which is to be built on a site of twelve acres situate on Denmark-hill, from the designs of Messrs. W. A. Pite and R. S. Balfour.

The plan requires some explanation, due to the inequality of the site. The hospital is to accommodate 600 beds.

The vertical axis of the hospital is from north to south, and the disposition of the buildings is consequent on the contour of the site, which rises rapidly towards the south. The first floor of the administration building is on the level of the ground floor of the ward blocks. On this floor, and occupying the central position of the site, is accommodated the nursing direction of the whole institution. Also from this central position the administration of the sick wards, the nurses' home, and the general superintendence radiates.

At the head of this official section (which is in close and direct communication with the secretarial department below) is found the grand staircase, which rises from the ground floor of the front block to the top floor of the hospital. A central position is provided for the chapel, which is placed on the same level as the nursing direction. Still carrying out the central idea, the Post-office and telephone room have been placed in the eye of the institution. Adjacent, and in the same central position, is a waiting-room for the friends of patients awaiting intelligence, with a doctors' room in connexion therewith. A servants' staircase completes this central scheme.

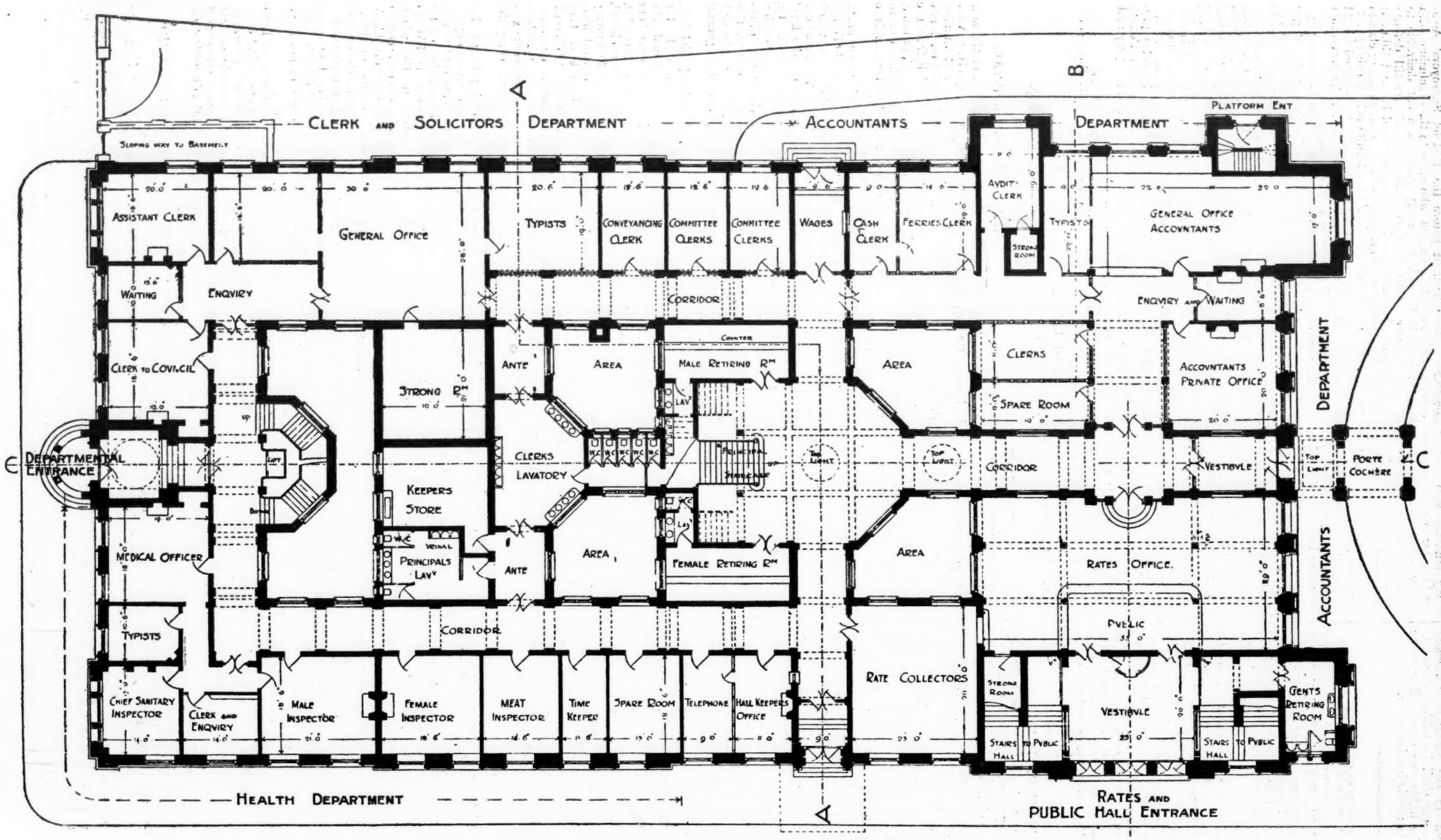
The same central and radial principle has been applied to the kitchen and stores departments, which are below the same centre with dual diet lifts serving to both sides of the hospital. The linen department is likewise placed in the same relation to the whole, being below the chapel, with direct access to all parts of the hospital and the laundry block.

In arranging the housing of the nurses as to present and future requirements, the resident medical officers' apartments, and the servants' quarters, particular attention has been given to ensure that, while being provided in the same block, they are self-contained and do not intercommunicate with each other.

As has been indicated, the design is based on a principle of centralisation and radiation in all departments. This principle will be readily admitted to be of first-rate importance, and absolutely essential to secure economical, effective, and efficient hospital administration.

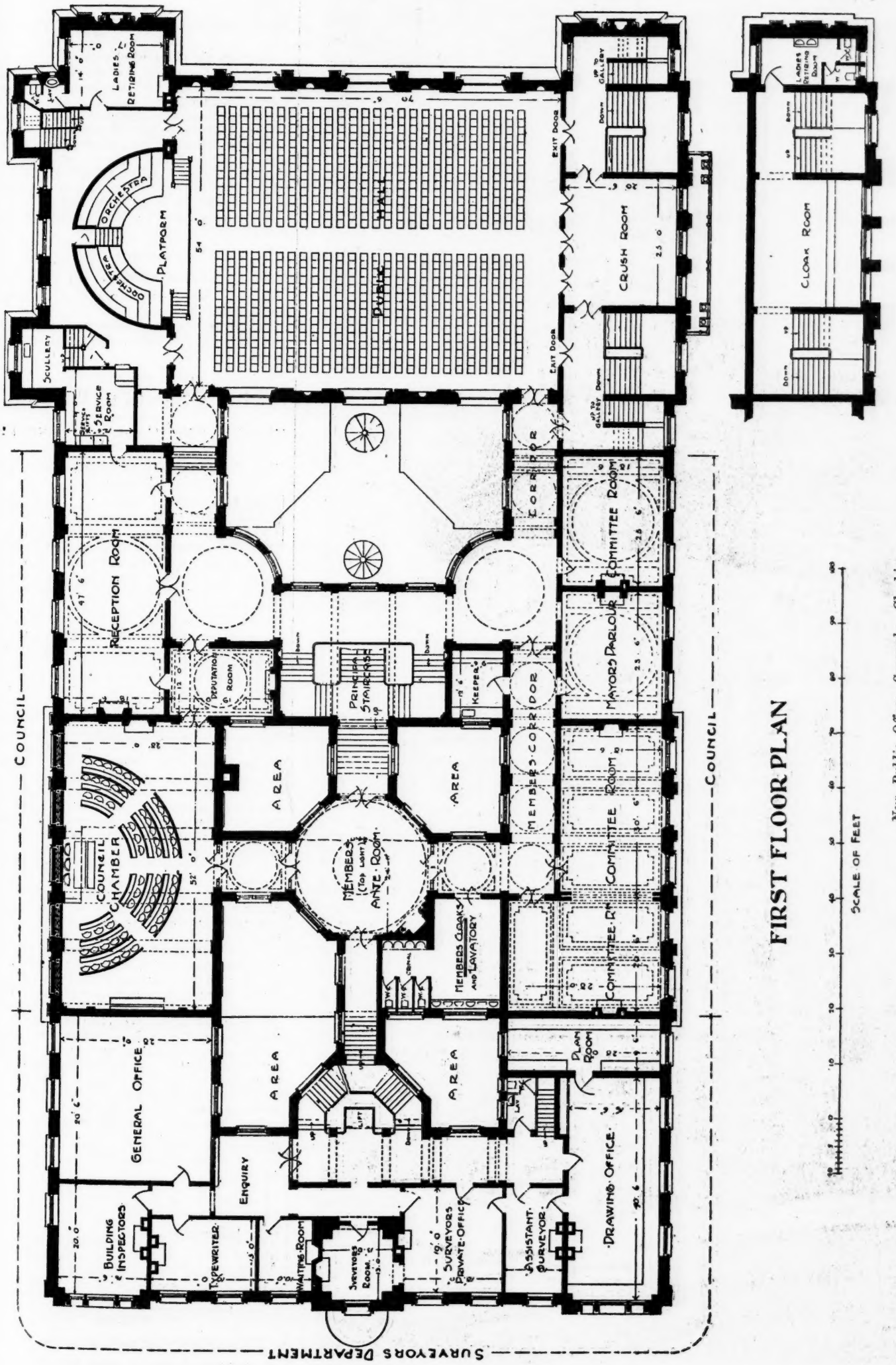
NEW PUBLIC OFFICES, SEACOMBE, CHESHIRE.

WE publish the design by Messrs. Briggs and Wolstenholme and Arnold Thornely to which the first premium was awarded in the recent competition for new Public Offices for the Seacombe and Wallasey District, Cheshire. It was, if we remember right, called "Wallasey" in the earlier announcement of the competition; but this is the same building.



GROUND FLOOR PLAN

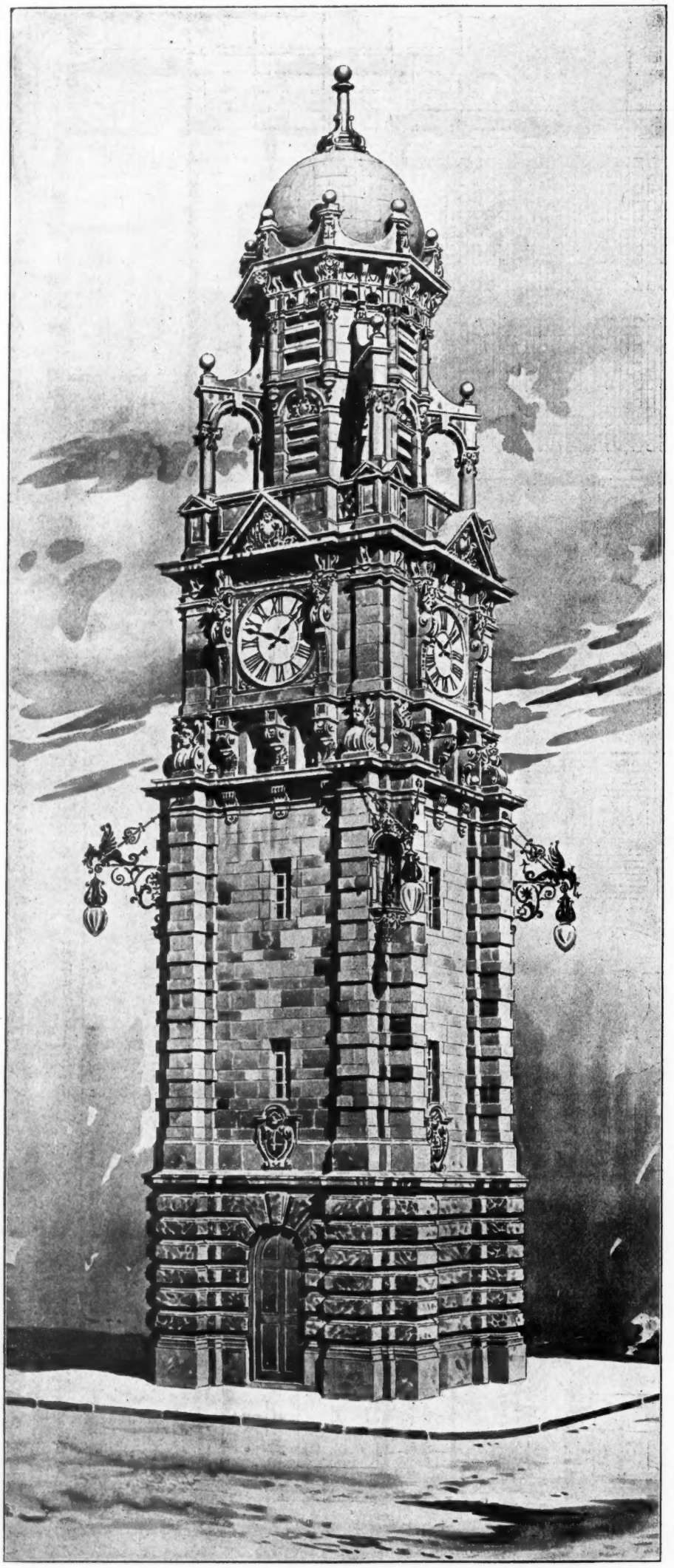
New Public Offices, Seacombe, Cheshire.



FIRST FLOOR PLAN

SCALE OF FEET

New Public Offices, Seacombe, Cheshire.



Proposed Clock Tower, St. George's-circus: Perspective View.

We give the perspective view, and plans to a pretty large scale of the two principal floors, the arrangement of which explains itself.

PROPOSED CLOCK TOWER, ST. GEORGE'S CIRCUS, S.E.

WE give the sheet of elevations, plans, and sections of the design by Mr. Jan F. Groll, which received the first premium in the recent competition for a clock tower to be erected in St. George's-circus; and add also a reproduction from the architect's perspective sketch.

By the terms of the competition the total cost of the building, exclusive of the clock, was not to exceed 1,700*l.*; the height not to exceed 50 ft. above the street level, and means to be provided for access to the roof.

The description of the work is fully given in the memoranda on the drawing.

BOOKS RECEIVED.

LYNTON AND LYNMOUTH. (The Homeland Association. 6d.)

TENTH ABSTRACT OF LABOUR STATISTICS OF THE UNITED KINGDOM: 1902-1904. (Wyman & Sons. 1s. 2d.)

The Student's Column.

TYPICAL STRUCTURES IN CONCRETE-STEEL.—XXI.

TWO COIGNET SYSTEM STOREHOUSES NEAR PARIS.

VISITORS to Paris who have been led by archæological tastes to the ancient town of St. Denis, or have yielded to the inducements offered by Asnières and Argenteuil in the way of rowing or sailing on the River Seine, may have noticed the low-lying peninsular situated between the three places mentioned. This somewhat dreary area, known as the Plaine de Gennevilliers, is protected against inundation by an embankment along the river side, and is chiefly occupied by market gardens fertilised by the liquid conveyed from the main drainage system of Paris by the *collecteur général d'Asnières.*

Near the bank of the Seine on the northern boundary of the plain, a large establishment is now in course of construction by the Société d'Eclairage, Chauffage, et Force-Motrice de Gennevilliers. The object of this company is to supply gas for purposes of light, heat, and power to all the towns and villages in the surrounding district, and when finally completed the works will include gas-producing plant, several large gasometers, and storehouses for coal and other materials. A wharf on the river front serves for the discharge of coal brought up the river in lighters, and from the wharf a concrete-steel viaduct has been built to support the railway lines laid down for the transportation of materials to the storage depôts.

In the present article we propose to deal only with the construction of two large storehouses, which, with the exception of the brick panels between the wall framework, are built entirely of concrete-steel on the Coignet system, which was selected after due consideration by M. Stinville, the engineer by whom the general plans of the building were prepared. The details of the armoured concrete construction were designed by M. E. Coignet, M.Soc.Ing.Civ. de France, and the works were executed by MM. Edmond Coignet et Cie, of Paris.

Fig. 142 is a plan showing the general

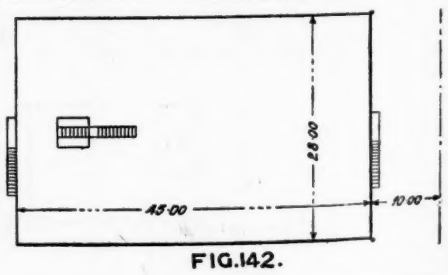


FIG. 142.

dimensions of one of these two storehouses. Each of the buildings is 45 metres long by 28 metres wide, and between them is a space of 20 metres, this being occupied by a roadway.

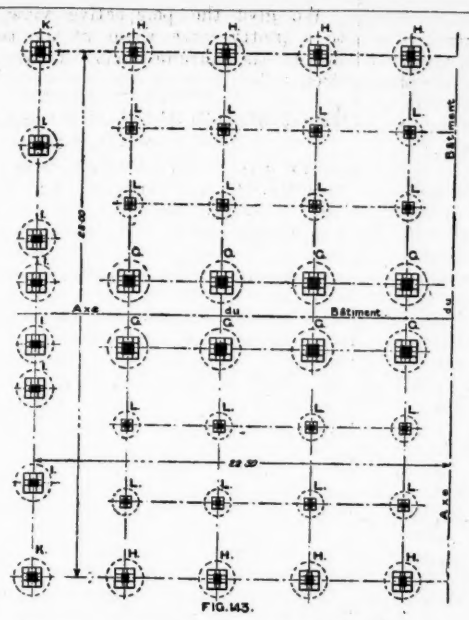


FIG. 143.

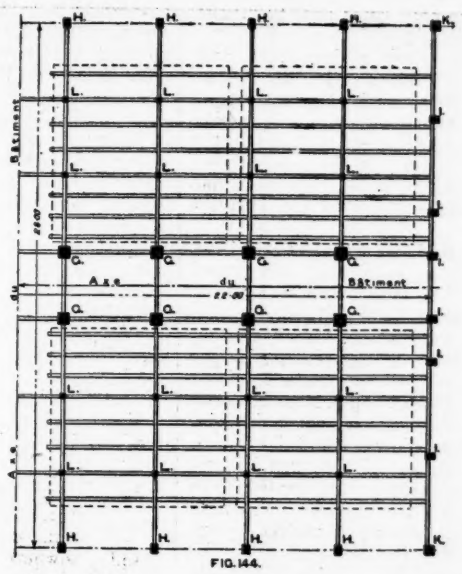


FIG. 144.

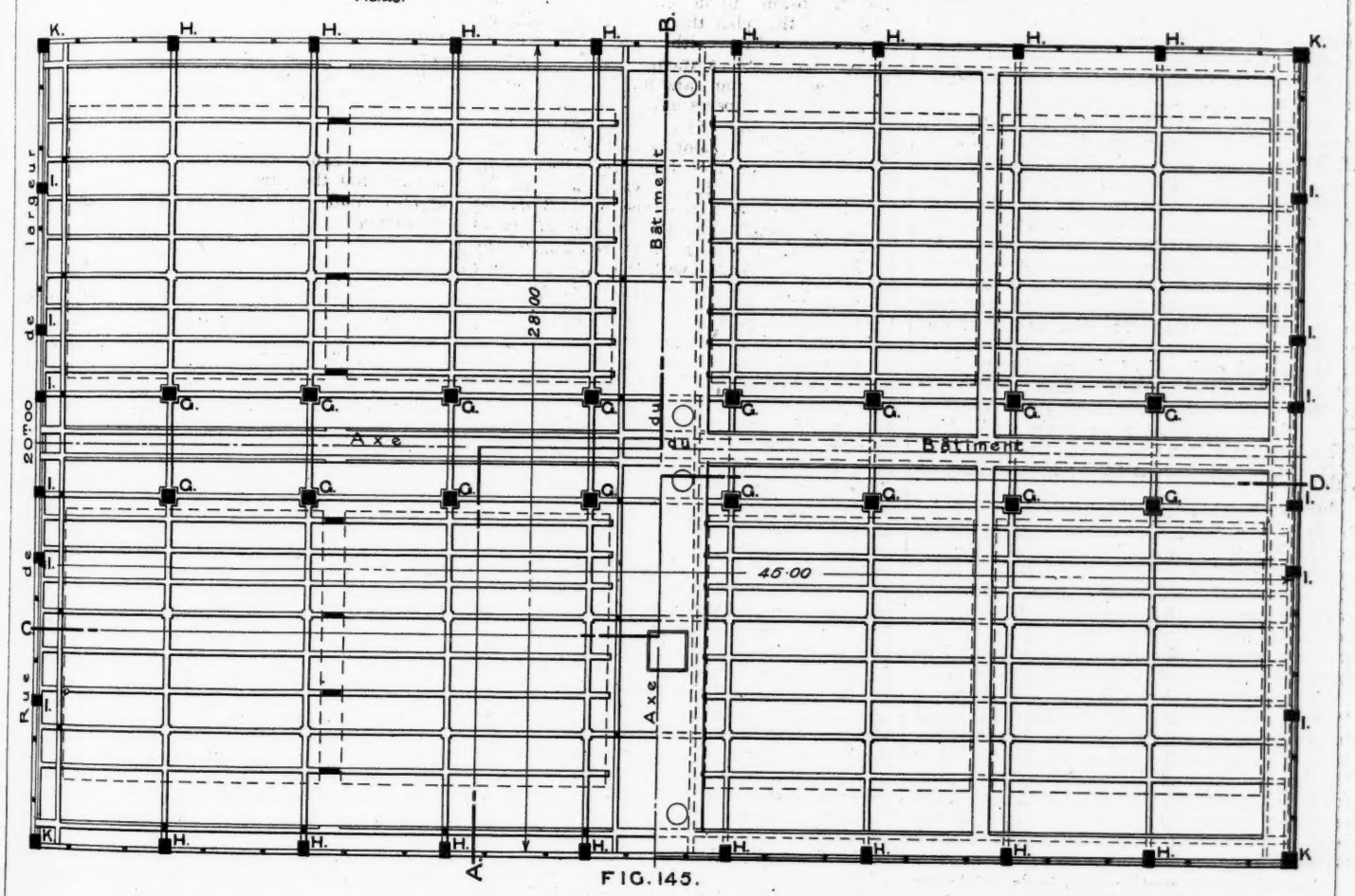


FIG. 145.

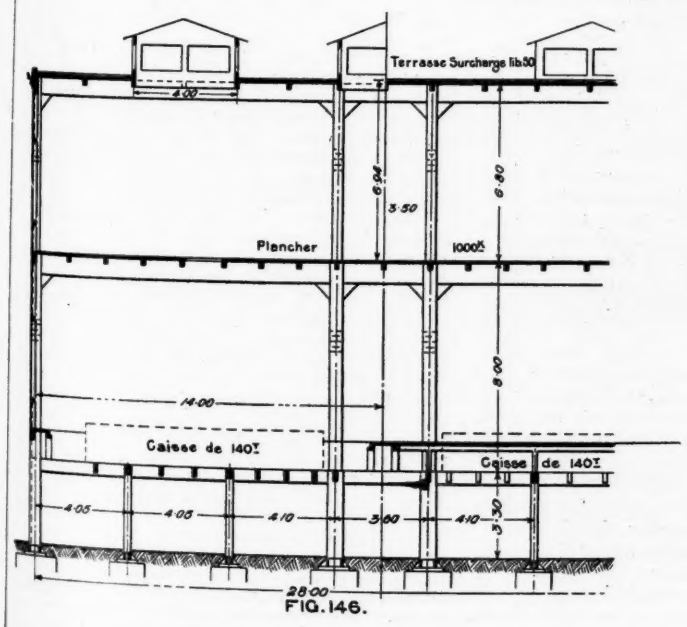


FIG. 146.

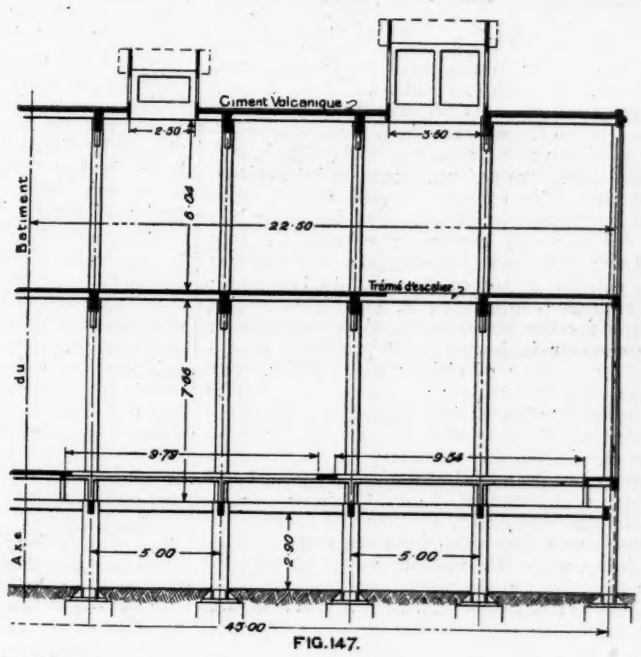


FIG. 147.

Illustrations to Student's Column.

As the storehouses are identical in dimensions and construction, we need only deal with one of them in the following description.

The building comprises a basement and two upper floors, 4·40 metres and 11·30 metres above ground level respectively, and a flat roof 18·10 metres above the same datum. It should be noted that, although the outer walls are partly of brick, the entire weight of the structure is carried by the concrete-steel columns and transmitted by them directly to the foundations.

Fig. 143 is a half-plan of the foundations, from which it will be seen that the entire building is supported by eighty columns of five different types, lettered G H I K L, for the purpose of ready identification. Each column is supported on a cast-iron base plate, and this in turn by a concrete pier of cylindrical form carried down to a sufficient depth into the earth to insure stability, the top surface of the pier being 50 centimetres below ground level.

There are four columns of the type K, one at each corner of the building, and for this type the concrete pier has the diameter of 2 metres. The cast-iron base measures 1·05 metres square at the bottom, 50 centimetres square at the top, and 40 centimetres high. The base plate is stiffened by eight ribs rising from the bottom plate to the top, where suitable provision is made for supporting the longitudinal reinforcement of the column, which measures 50 centimetres square.

Along the front and back walls of the structure all the remaining columns are of type H, there being eight of these between the corner columns at the ends of the façades, or, including the latter, ten columns in each wall. The foundation-piers are of 2 metres diameter, the same as for the type K columns. The cast-iron base also measures 1·05 metres square at the bottom, but at the top the dimensions are 50 centimetres by 35 centimetres, to correspond with the transverse dimensions of the column.

Along each end wall of the storehouse there are six columns of type I, measuring 50 centimetres by 35 centimetres, making, with those of type K, eight columns in each wall. The cylinder foundations and the cast-iron bases are of the same dimensions as for the columns of type H.

On either side of the longitudinal axis of the building there is a row of eight columns, type G, in addition to two type I columns, making ten columns in each row. The foundation-piers for the interior columns are of 2 metres diameter, and the cast-iron bases measure 1·20 metres square and 60 centimetres square at the bottom and top respectively, the columns themselves having a sectional area of 60 centimetres square.

The other interior columns are those of type L, which are of much smaller dimensions, being intended simply for the intermediate support of beams situated at 1·10 metres below the level of the first floor. The cylinder piers for the columns are 1·40 metres in diameter, the cast-iron bases 80 centimetres square at the bottom, while the columns themselves measure 25 centimetres square.

The columns generally are disposed in rows 5 metres apart centre to centre, measured along the main axis of the building, but the spacing of the columns in the transverse rows is not uniform. At each end wall two of the I type columns are spaced 3·35 metres apart, one on either side of the centre line, then comes another column at a distance of 2·325 metres, and finally come two outer columns at intervals of 5 metres. The columns in each of the other rows are spaced on either side of the centre line as follows:—(1) Centre to column G, 1·80 metres; (2) column G to column I, 4·10 metres; (3) column I to column L, 4·05 metres; (4) column L to column H, 4·05 metres. The reason for the arrangement of the columns in the manner indicated is to provide for supporting a series of eight storage tanks, each measuring 9·44 metres square by 1·50 metres deep, and weighing 140 tonnes, including the contents. These tanks are carried upon a system of main and secondary beams, the ends of the main beams being supported by the outer columns of types H, I, and K in the front, back, and end walls, and by the columns of type G on either side of the centre line of the building, while intermediate support is afforded by the columns of type L.

Fig. 144 is a half-plan of the beam system, which, as we shall explain more fully a little later, does not constitute any part of the first floor proper.

Referring to this drawing, the main beams extending from front to back of the building are supported by the rows of columns, and the spacing between each beam is consequently 5·00 metres, centre to centre. All these beams are of concrete-steel and measure 16 centimetres wide by 45 centimetres deep.

Below the areas covered by the tanks, and along the lines of columns G, these beams are connected by secondary beams with a cross-section measuring 16 centimetres wide by 40 centimetres deep. On either side of the longitudinal axis of the building the secondary beams are spaced as follows:—(1) From axis to line of columns G, 1·80 metres; (2) from line G to first beam, 0·80 metre; (3) the next three beams are spaced 1·10 metres apart; (4) the next four beams are spaced 1·35 metres apart; (5) from the last beam to centre line of columns H the spacing is 2·70 metres.

The positions of the four tanks in one-half of the building are indicated in Fig. 144 by broken lines. Inspection will show that there are ample spaces between the tanks themselves, as well as between them and the ends and sides of the building. These spaces are occupied, as shown in Fig. 145, by the first floor, which consists of beams and a floor slab supported along the outer edges by the columns H, K, and I, and elsewhere by dwarf columns built up from the beams upon which the tanks are placed. In this plan the outer brick walls are indicated, together with the 15-centimetre square concrete-steel stanchions which, together with the main columns and horizontal members in this and the upper story, constitute a complete skeleton framing for the entire building.

For supporting the floor, beams 16 centimetres wide by 42 centimetres deep are carried along the front, back, and end walls between the columns. Then, at a distance of 1·03 metres from these beams, there is a line of dwarf columns, with a section of 25 centimetres by 15 centimetres, parallel with the front and back walls, each of these members being built up from one of the main beams supporting the tanks; and parallel with the end walls there are four rows of dwarf columns with the cross-section of 15 centimetres square and an average spacing of about 4 metres in each row, built up from the secondary beams below the tanks, These four rows are situated one near each end of the building and one at each side of the transverse centre line.

Upon the dwarf columns are beams 25 centimetres wide by 17 centimetres deep, for a concrete-steel floor slab 6 centimetres thick, which extends over the two parallel series of beams, forming a continuous platform round the building. The front or inner edge of the platform is rebated for the addition of wood flooring up to the tanks. The three transverse gangways between the tanks, two 65 centimetres wide and one 3·50 metres wide, consist of concrete-steel floor slabs 12 centimetres thick with suitable support from below, but the longitudinal gangway extending from end to end of the building is floored with concrete-steel only in the centre, for a width of 1 metre, the remainder of the floor up to the tanks on either side being of timber.

Fig, 146 is a part cross-section of the building, and Fig. 147 a half-longitudinal section. These drawings will serve the purpose of further explaining the details of construction.

From the particulars stated above, it will be seen that the first floor is really a platform pierced by eight openings in each of which is a large shallow tank, partially sunk below the floor level, above which the upper part of each tank projects to a height of 40 centimetres.

The dimensions given for the main columns in the walls of the building, and for the interior columns only apply so far as concerns those portions of their length extending up to the beams of the system upon which the tanks are erected. Above that height the type G columns are reduced in sectional area to 50 centimetres square proportionately with the reduced load to be carried, and none of the type L columns are continued above the same level since the only reason for their employment was to afford intermediate support for the members beneath the eight tanks.

The height of the first story of the building from floor to floor is 6·90 metres, the clear headway from the first floor to the under side of the beams above being 6·04 metres.

The space beneath the tank beams is 2·85 metres high, and, being enclosed by brick walls between the columns, it forms a basement which is amply lighted by windows 2 metres wide by 1 metre high, one in each wall panel. Access doors are provided at each end below the entrance to the first floor.

Two outside stairways, each of twenty-five steps, lead from ground level up to a landing outside the longitudinal gangway between the rows of type G columns, and inside stairways run from the first floor to the second floor and thence to the terrace roof. The positions of these stairways are indicated approximately on the key plan (Fig. 142).

The front and back walls are set back a little from the outer face of the columns, the approximate thickness of the masonry being 22 centimetres nearly up to the second floor and 17 centimetres above the line in question. The end walls are 22 centimetres thick up to the level of the second floor, and 17 centimetres thick up to the roof. Figs. 146 and 147 show some of the horizontal wall beams running from column to column, these members as well as the vertical stanchions of concrete-steel between the main columns having the cross-sectional area of 15 centimetres square.

Detailed description of the second floor and of the upper portion of the building generally must be left until next week. In the meantime we may state, in concluding the present article, that the superload on the tank beam system works out at about 1,500 kilogrammes per square metre (307 lb. per sq. ft.), and that the calculated superload upon the first floor was 500 kilogrammes per square metre (102·5 lb. per sq. ft.). The latter is a small unit load, but, as the floor is merely provided for the convenience of the staff and not to carry heavy weights, it is quite sufficient.

The floors were designed with an ample margin of safety, and the official tests have proved that they are capable of supporting far greater loads per square metre than those mentioned.

OBITUARY.

M. PAUL DUBOIS.—We regret to announce the death, from influenza, of the eminent French sculptor M. Paul Dubois. He was born in 1829, and commenced life as a student of law, but at the age of 30 he abandoned the legal profession and entered the studio of Toussaint, where he worked for two years. He then went for three years to Italy to study the masterpieces of antique and Renaissance sculpture. His first work exhibited in the Salon, in 1863, was "St. Jean Enfant." In 1865 his "Chanteur Florentin" obtained a great success. In 1873 he exhibited "Eve Naissante," and the same year was appointed curator of the Luxembourg Museum. Two statues by him, "Le Courage Militaire," and "La Charité," intended for the tomb of General Lamoricière, were much admired in the Salon of 1876. The tomb itself, with the two other statues which completed it, "La Foi" and "L'Histoire," was exhibited in 1878. The tomb is now in the Cathedral of Nantes. In 1878 Dubois succeeded Guillaume as Directeur of the Ecole des Beaux-Arts, a post which he held till his death. Among others of his works may be mentioned the statue of Jeanne Darc, erected in front of the church of St. Augustin; that of the Connétable de Montmorency, now at Chantilly, and of which an illustration was published in the *Builder*; busts of Gounod, Baudry, Henner, and Pasteur; and a splendid group symbolising "Alsace et Lorraine." Dubois was also a very talented portrait painter. It was he who introduced, at the Ecole des Beaux-Arts, the scheme for simultaneous instruction in architecture, sculpture, and painting. Dubois had obtained all the official honours which his high talent merited; he twice received the "Médaille d'Honneur" of the Salon, and was a "Grand Croix" of the Legion of Honour. His death is a great loss to French art.

MR. TWEEDALE.—We have to announce the death, on May 14, at his residence in the Isle of Man, of Mr. John Tweedale, in his 52nd year. Mr. Tweedale had been, during a period of some twenty-six years, a partner of the firm of Messrs. S. E. Smith & J. Tweedale, of Leeds, architects, which was dissolved at the end of the year 1903, when Mr. Tweedale retired from practice. Of the architectural works carried out in Leeds by the firm we may mention the following:—The parish room, cookery school, classrooms, etc., in Clarendon-road; the York City and County Bank (illustrated in the *Builder* of December 19, 1896, No. III. of our series, "The Architecture of our Large Provincial Towns"); the St. Luke's Day Schools; a large block of shops facing New Briggate and Cross Belgrave-street; a warehouse in Whitehall-road; and the enlargement and improvement of the Christ Church Schools. Five years ago Messrs.

S. E. Smith & J. Tweedale made the plans and designs for the buildings erected at the Manor Farm, Garforth, for the East and West Ridings County Councils, to serve for students taking the course of instruction given in the Agricultural Department of the Yorkshire College. The buildings comprise the dairy and cold storage, and, in another section, the lecture, bacteriological, and classrooms, with a laboratory, male and female students' common-rooms, board-room, etc. Mr. Tweedale was the architect of his own residence at Harrogate, and a former Vice-President of the Leeds and Yorkshire Architectural Society. In 1881 he was elected an Associate and in 1889 a Fellow of the Royal Institute of British Architects.

SIR BERNHARD SAMUELSON, BART. — Sir Bernhard Samuelson, Bart., P.C., F.R.S., who died on May 10 at his residence, No. 56, Prince's-gate, London, S.W., aged 84 years, was the son of Mr. Samuel Henry Samuelson, a merchant, of Liverpool. He established the Britannia Ironworks at Middlesbrough, and, in association with the late Mr. Vaughan, developed the resources of the Cleveland district in the production of iron. He was an eminent authority upon many matters concerning the manufacturing industries of Great Britain and the Continent, and the technical education of the industrial classes. Sir Bernhard Samuelson was chairman, 1882-4, of the Royal Commission on Technical Instruction; in 1878 he was elected President of the Cleveland Ironmasters' Association, and framed the report of the Select Committee on the Drainage and the Prevention of Floods in the Thames Valley; and, in 1871, was awarded the Telford Gold Medal for a treatise on improvements in the manufacture of iron.

MR. WILLIAM DREW.—We have to record the death, on the 15th inst., at the age of 67, of Mr. William Drew, head of the firm of W. Drew & Sons, architects, of Swindon. Mr. Drew had been in practice for forty years in Swindon and the district. He had designed a large number of the public buildings, residences, hotels, business premises, etc., in this and neighbouring towns. One of his most important buildings is the Clarence-street Schools, Swindon, one of the first planned on the central-hall principle. He was employed largely by the late Swindon School Board, and solely by the School Boards of two adjacent parishes—Rodborne Cheney and Stratton St. Margaret. Mr. Drew had a large experience as a designer of hotels and public-houses, being employed by many brewery firms and companies in the district, also at Oxford. The largest residence he built was Beachcroft, at Kingsdown, near Swindon, for Mr. Thomas Ankel. The practice will be carried on by his sons under the same style as before.

GENERAL BUILDING NEWS.

CHANCEL, RUGELEY PARISH CHURCH.—The foundation-stone of the new chancel to St. Augustine's Parish Church was laid recently by Lady Alexander Paget. The improvements to be carried out provide not merely for the erection of a chancel, but for the building of two vestries, an organ-chamber, and a north transept. The scheme is to be carried out in accordance with the plans of Mr. F. A. Pearson, architect, of London, and the contract has been let to Mr. Edwin Whittingham, builder, etc., of Newport, Salop.

ST. ALBAN'S CHURCH, LEICESTER.—The foundation-stone was laid recently of the Church of St. Alban, which is being erected in Harrison-road, Leicester. The architect is Mr. Howard H. Thompson, and Messrs. Bradshaw Brothers are the builders. The new church is planned to provide accommodation for a congregation of 600, and the clergy and choir stalls will seat thirty. The total internal length of the edifice will be 140 ft., the width of the nave between the piers 26 ft., and the aisles 10 ft. wide. The nave will consist of five bays, with wide low arches of 16 ft. span. The ceiling will be a segmental curve, with moulded ribs, and the interior woodwork will be stained. The edifice will be erected with Ellistown wire-cut red bricks 2¼ in. thick, and with dressings of Darley Dale Derbyshire stone. The main roof will be covered with a South Wales slate—the Precelly Rustico. The main floor will be made of red deal wood blocks laid on concrete, while the chancel and porch floors will be in mosaic. A low-pressure hot-water heating scheme will be carried out by Messrs. Ashwell & Nesbit.

PRESBYTERIAN CHURCH, ARTHUR'S HILL, NEWCASTLE-ON-TYNE.—The Arthur's Hill Presbyterian Church, Newcastle, was opened on the 10th inst. The style of the buildings is late Gothic, and the church is built of local stone, with tower and angle turret. The interior consists of nave, aisles, and transepts, with galleries and vestibule, with gallery staircases at front. The nave and other ceilings of the church are of pitch-pine. The seating accommodation is for 700, including choir seats, which occupy a platform immediately in front of the pulpit. The ground floor (which is laid throughout with wood-block flooring on concrete) has about 400 sittings, and the galleries 300. The whole of the pews are of pitch-pine. The gallery front is all in panelled pitch-pine, and the pulpit is also in pitch-pine, panelled and moulded, with similar framing on wall behind. The organ-chamber is placed behind pulpit at gallery level. Behind the church, on the ground floor, there is a small hall, to be used for infants' classroom and prayer meetings, a vestry for minister, classroom, and tea kitchen. On the first floor, over same, there is a church parlour, which has cloakroom and lavatory attached. Beyond the organ-chamber are two classrooms. The heating is by low-pressure hot water, with radiators in vestibule, corridors, and staircases. The lighting is by electric incandescent lamps. The architects are Messrs. Badenoch & Bruce, Newcastle; the contractor Mr. J. M. Whamond, Gosforth; the electric lighting is in the hands of Messrs. T. G. Usher & Co.; and Messrs. Emley & Sons are responsible for the heating. The estimated cost of the church is 6,500*l.*

COUNCIL SCHOOL, WEST HAM.—The foundation-stone of Hilda-road Council school was laid recently by the Mayor of West Ham. The school is the forty-fifth block of elementary school buildings erected by the education authority of West Ham, and the first to be erected under the authority created by the Education Act of 1902. It comprises three blocks of buildings. The principal block, containing the boys' and girls' departments, is on two floors; the infants' department is a separate building of one floor; the manual instruction school and boys' covered playground forms the third block. The total number of school places provided in the three departments is 1,000 (infants 400, girls 300, boys 300). The site comprises an area of about 1¼ acres, and has two long frontages to Chester and Hilda roads. The contract for the works, which includes heavy foundations owing to the nature of the site, amounts to 23,923*l.*, and is being carried out by Messrs. W. Gregar & Son to the designs and under the supervision of the architect, Mr. William Jacques.

SCHOOL, CAMBERWELL.—A new County Council school, capable of accommodating about 1,000 children, has been erected in Grove-lane, Camberwell. The site adjoins a small open space which has been acquired by the Camberwell Borough Council. The school buildings are two in number, one being a two-story building for junior mixed children on the ground floor and for senior mixed children on the first floor. The other is a one-story building for infants, whilst a separate block is provided for a drawing classroom and a room for practical science on the playground level. The buildings were designed by and erected under the supervision of Mr. Thomas J. Bailey, the Architect to the Education Committee of the Council.

WHITLEY NORTH SCHOOLS, NORTHUMBERLAND.—The new schools at Whitley were opened on the 8th inst. by Colonel F. D. Blake. The accommodation is for 1,020; arranged in three blocks of 340 each, for the use of boys, girls, and infants. The entrance to the two latter adjoin, and that for the boys is off another street. Each school is approached by two entrances, with cloakroom and lavatories, and comprises a central hall and six classrooms, which open directly off the hall. The whole of the interior floors are of solid blocks, and the walls have tinted glazed brick dadoes. On the exterior the walls are of red facing bricks and stucco work, and the roof covered with green slates. The heating is by hot water on the low-pressure system, with ventilating radiators and valves to admit and regulate the fresh or warm air, the foul air being extracted from each room and conveyed to turrets furnished with electric fans. The buildings have been erected from the designs of Mr. W. H. Knowles, architect, Newcastle; Messrs. J. & W. Simpson, of North Shields, being the contractors, and Mr. J. Nicholson the clerk of works.

NEW HALL, ST. GEORGE'S PRESBYTERIAN CHURCH, NEWCASTLE-ON-TYNE.—A new hall has been built by the congregation of St. George's Presbyterian Church, in Jesmond-road, Newcastle. The hall will seat 500, and cost 2,500*l.* The new building is a stone structure, with the main front towards Jesmond-road. The present accommodation comprises, in addition to the hall, a church parlour, infants' classroom, vestries, and caretakers' house. Low side aisles have been planned which, by means of folding partitions or curtains, can be formed into class or ante rooms of varying sizes, and shut off from the central space—large enough for ordinary services—which is lighted by clerestory windows on either side, in addition to the semi-circular window in the main gable. For special occasions, the whole space can be thrown open, giving accommodation for over 500. The building has been erected by Mr. S. F. Davidson, contractor, Newcastle, who has also installed the system of heating. Electric lighting is arranged for throughout, and an electric fan is provided for the extraction of vitiated air, this having been carried out by Messrs. Rowland Barnett & Co., Newcastle. The architects are Messrs. Cackett & Burns Dick.

POORHOUSE, OMOA, N.B.—A new combination poorhouse for the parishes of Cambusnethan, Bothwell, and Shotts has been erected near to Omoa railway station, in the parish of Shotts. The site extends to 10 acres, and the institution consists of ten different blocks of buildings, providing accommodation for 203 inmates under the following classification:—Receiving or probationary block, ten; four ordinary pavilions, two stories in height, divided into dayrooms and dormitories for seventy males, forty-eight females, and twenty-four children; hospital block, twenty-four males and eighteen females; and a ward of five beds for maternity cases. In this block accommodation is also provided for nurses and the doctor. There is also a block of two cottages, intended for married couples. The administrative is the largest building of the group, and here are placed the committee-room, office, visitors' waiting-room, besides accommodation for the governor and servants. The kitchen and dining-hall are connected with pavilions by covered ways. The wash-house, laundry, workshops, boilers, and engines are placed to the rear of the administrative block. The mortuary is situated on the east portion of the site, and consists of mortuary, post-mortem and service room. There is also a range of stable buildings, piggery, etc. The outer walls are built of stone and lined inside with brick, having a space between for ventilation. The cost of the whole undertaking will be about 175*l.* per bed. The architect is Mr. Alex Cullen, Motherwell.

LINLITHGOW JOINT HOSPITAL.—Linlithgow Joint Fever Hospital was opened on the 12th inst. by Colonel Chalmers, of Longcroft. The hospital is situated on the south side of the Burgh of Linlithgow, on the rising ground near the combination poorhouse. It contains twenty-five beds. In the centre of the buildings is the administrative block, containing apartments for the house doctor, the nurses, and the caretaker, while at each end is a ward for the observation of doubtful cases. There are two pavilions, which are divided into male and female wards. Behind the principal buildings are the necessary offices, laundry, disinfecting apartments, dairy, receiving apartments, etc. The architects were Messrs. John Melvin & Son, Alloa, and the total cost is expected to be about 9,000*l.*

LIBRARY, LEICESTER.—The new free library at Leicester, which has been erected in Bishop-street at a cost of 12,000*l.*, exclusive of the interior fittings, was opened on the 8th inst. The entrance in Bishop-street gives access to a hall with a mosaic pavement. The walls are lined with glass tiles. Immediately on the right is the reading-room, 80 ft. by 31 ft. Placed down the centre are five tables with sloping tops, and at the further end are four flat tables. On the side walls are fixed desks for newspapers. The lending department is separated from the librarian's quarters by a long counter. An electrical hoist goes from this department, and serves all of the floors. At the Bowling Green-street end of the room a winding iron staircase leads to a spare room, which will be used for storing newspapers, etc. Four flights of stairs, with landings at the termination of each one, are ascended from the hall in order to get to the reference library. The top landing of all has a tesselated Venetian pavement. On the left is the office of the librarian. On the opposite side are private lavatories, the walls of which are lined with opalite. The reference-room, which is entered through double glass doors, is of the same dimensions as the reading-room below. It has arched ceiling, decorated in fibrous plaster, wood-block floor, and twenty-four tables. The ladies' room opens out of the larger one, on the left. The rooms measures 31 ft. by 24 ft. The floor is of pitch-pine. On the top floor of all is a committee-room. The juveniles are provided for in the basement, where a room has been allotted to them. The floor is of Venetian coloured work. The basement also contains departments for patent specifications, bound files of newspapers dating over half a century back, and stores. A little room has also been provided for the staff, which they can use as a dining-room. Here also are lavatories, the boilers, and apparatus for lighting and heating. The architect of the building was Mr. Burgess.

LIBRARY, MANSFIELD.—The new free library for Mansfield has just been completed. For the new building competitive plans were invited to be sent in by selected architects, the choice eventually falling upon the one sent in by Mr. E. R. Sutton, Bromley House, Nottingham. The building comprises a large reading-room, a reference reading-room (which will also be utilised as a magazine reading-room), separate ladies' room, the lending library, the librarian's office, and a storeroom.

LOWESTOFT FREE LIBRARY.—The new free library at Lowestoft, situate in Clapham-road, and adjoining the technical schools, has just been opened. Mr. George William Leighton, of Ipswich, was the architect, and his plans were selected in competition by the assessor, Mr. Jonathan Bottle, of Great Yarmouth. The building contract was entrusted to Mr. G. Hawes, Norwich and Lowestoft. The building is of red brick, with Bath stone dressings. The visitor approaches the main entrance by way of the tower porch, beyond which a corridor extends, giving access to the magazine and news room, 34 ft. square. This room is controlled by an observation window from the librarian's office. The corridor gives access to the borrowers' lobby. From the corridor a marble staircase, lighted by a dome, with marble casings and panellings to the wall, leads to the first floor, where is the reference library, 30 ft. by 42 ft., lavatories, and the librarian's private room. Facing Clapham-road is the magazine-room, 42 ft. by 34 ft., with an open timber roof, and three overhanging oriel bay windows. At the opposite end of this floor is the reference library, panelled and fitted with bookshelves in bays under an arcaded gallery. This room is lighted by a central dome, as well as by side windows. There are also other staff-rooms and offices, and retiring-rooms. The roof of the building is covered with Welsh slates; and rising at a point immediately above the main entrance there is a fleche, which will serve for the ventilation of the entire building. The whole of the rooms are wood-panelled throughout. The flooring is fireproof, and the building warmed by a low-pressure hot-water heating apparatus.

PUBLIC LIBRARY, KING'S LYNN.—The new public library at King's Lynn was opened on the Tower Field site on the 18th inst. The walls are faced with carr stone, with dressings of terra-cotta, and the roof is covered with slates. The central feature of the design is a square tower, 44 ft. in height, forming part of a projecting bay, 30 ft. wide, at the south-east corner of the Tower field. From this point two wings diverge at an angle of 60 deg., and each wing is relieved at 12 ft. from the corner of the entrance bay by another projecting bay, of octagonal form, some 15 ft. across, and containing windows, in one case of a committee-room, and in the other of the staff-room. Thence each wing extends a further distance of 50 ft., divided into five bays, the window in the central one being carried up into a dormer. The wing facing London-road contains a news-room, measuring 48 ft. by 21 ft., and that adjoining Greyfriars-road a "reviews" room (or general reading-room), about 30 ft. by 20 ft., and a reference-room 20 ft. square. The space intervening between the two wings is allotted to the lending library, which is in future to be managed on the "open-access" system, borrowers being allowed to go to the shelves and choose their own books. The staff, located within the segmental enclosure in the centre of the building, with the rows of shelves radiating from it, will have a complete view of the lending department (the entrance and exit of which will be governed by turnstiles), and will also be able to see, through glass partitions, all the other rooms allotted to the public. Mr. H. J. Green, of King's Lynn, is the architect.

STAINED GLASS AND DECORATION.

WINDOW, WALKERBURN CHURCH.—A large single-light stained-glass window has just been erected in Walkerburn Church, Scotland, to the memory of Agnes Ballantyne by Messrs. Percy Bacon & Brothers. The figure represented is S. Agnes, who is depicted with a wreath of simple flowers, holding a palm, and with a lamb at her feet; there is a curtain behind the figure, and above are angels holding a scroll, upon which are inscribed the words, "Ecce Agnus Dei."

APPOINTMENT.

CHICHESTER.—At the meeting of the Chichester City Council, on the 19th inst., Mr. Frank J. Lobley, of Hale, Cheshire, was appointed Surveyor and Inspector of Nuisances; 123 applications for the post were received.

SANITARY AND ENGINEERING NEWS.

REBUILDING PLOUGH BRIDGES, BYFLEET.—Much interest is being taken in the work of rebuilding Plough Bridges. Whatever claims the old wooden structures had to picturesqueness, they were sadly lacking in stability, and drivers of vehicles crossed them in fear and trembling during the not infrequent floods. On being demolished they were found to be very rotten, and practically unsafe for vehicular traffic, even when there was no such special strain put upon them. The contractors are Messrs. Edwards & Co., of Strand, and Mr. R. St. George Moore, of Westminster, is the engineer, whilst Mr. W. E. Judd was selected to look after the interests of the Chertsey Rural District Council as clerk of the works. The contract price is 3,162*l.* Two spans will be used to cross the River Wey, and one span will bridge the mill-stream. The foundations and abutments are now being put in, considerable difficulty in connexion with the foundations being experienced, owing to obstructions encountered below water level. The remains of previous bridges for centuries back have had to be removed. The foundations of the pier in the middle of the Wey will go down about 15 ft. below water level, and it will be capped with granite to carry cast-iron columns supporting the bridge.—*Surrey Advertiser.*

WATER SUPPLY, FYLINGDALES, NEAR WHITBY.—On the 11th inst. Colonel A. G. Durnford, R.E., Local Government Board Inspector, held an inquiry into the application of the Whitby Rural District Council for sanction to borrow 1,650*l.* for the purposes of increasing the present supply of water to those living within the area of the supply at Fylingdales by the purchase of additional springs, the construction of reservoirs, laying of mains, etc. Mr. F. G. Fairbank, A.M.Inst.C.E., York, who is responsible for the scheme, gave evidence, among others.

THE ROYAL SANITARY INSTITUTE.—At an examination in sanitary science as applied to buildings and public works, held in Edinburgh, May 19 and 20, 1905, one candidate presented himself, Mr. A. R. Myers (Edinburgh), to whom a certificate was granted.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. Joseph Peebles, quantity surveyor, has removed his offices from 28, John-street, Bedford-row, to 7, Southampton-street, Bloomsbury-square, W.C.——Mr. G. Clifford Potter, 18, Eldon-street, E.C., has been appointed sole agent in the United Kingdom for Messrs. C. F. Beer Sohne, manufacturers of tar products, Cologne.

EXPORT OF NICARAGUAN LUMBER.—Mr. Bigham, the British Consul, in his annual report on the trade and commerce of Nicaragua, writes that the published Government returns of the export of wood only give the shipments made from the Pacific coast; the value of these shipments in the year 1903 amounted to 3,867*l.*, of which dye woods, brazil and mora, were represented to the value of 550*l.* All the brazil went to France, one-half of the mora to the United Kingdom, the other half being equally divided between France and Italy. Of late years the shipment of dye woods from Nicaragua has fallen off to a great extent, owing to the low and constantly fluctuating price in Europe, and the heavy expenses in connexion with the shipments. The value of lumber exported from the Pacific coast during the same period amounted to 3,317*l.*, of which the chief items were:—Mahogany, 211*l.*; cedar, 1,315*l.*; sawn lumber and boards, 1,621*l.* The greater part of the mahogany and cedar went to the United Kingdom, the shipments being valued respectively at 121*l.* and 1,290*l.* Of the sawn timber and boards, the value of 1,360*l.* was sent to Salvador, and the rest to the United States of America. In the forests of Nicaragua there is a great deal of valuable wood, which, owing to the want of roads and means of transport to the coast, cannot at present be profitably exported, but in the future will doubtlessly be a source of wealth to the Republic. Besides mahogany and cedar the following excellent woods abound:—Lignum vitæ; pochote, or prickly cedar; guanacaste, which gives a good building lumber, and also produces a gum that can be used as a varnish; jenisero, which possesses many of the qualities of the cedar, and grows to a much larger size; cortez, called, on account of the hardness of its wood, "Palo de Lierro," or iron tree; the white oak, used by coopers; the guapinol, which produces a gum said to be equal to the copal of Ceylon; mangle, the wood of which is used for posts of houses and can remain underground for many years without rotting; madrono, a similar wood to boxwood; guachapilin, from which most excellent railway sleepers are made; and rosewood, which has a beautiful grain and is well adapted for cabinet work. Amongst trees giving dyes are the brazil, mora, and fustic. Trees of medicinal value are the copaiba, liquid amber, balsam of Peru, and cinchona; and amongst trees giving industrial products are the indiarubber, gutta-percha, dragon's blood, vegetable wax, divi divi, and annatto. On the Atlantic coast an American company hold the monopoly for the shipment of mahogany. This company has been working for many years, and has invested a very large capital in its plant, which includes several miles of railway. The works employ large gangs of labourers, amongst whom are a number of natives of the Bahamas, who are usually brought out under contract. The company's principal logging camps are situated in the district of Rio Grand or Great River. The logs that are cut are thrown into the creek and streams that empty into Great River. On the flooding of the creeks in the rainy season the logs are floated down to that river, where they are caught by booms and made into rafts. These rafts are then towed down the river by small steamers to alongside the ocean steamer, which lies outside of the bar or entrance to the river. The Government returns do not give the value of the mahogany shipped from the Atlantic coast, but the returns of the Bluefields Custom-house show that export duty was paid in the year 1903 on 16,130 logs.

INDIAN IRRIGATION.—Irrigation works in the Indian Empire now include more than 8,700 miles of main and branch canals, and 26,000 miles of distributory channels serving nearly 30,000,000 acres of cultivable land. Although representing a capital outlay of about 25,000,000*l.*, these works yield a net revenue to the Government of nearly 2,000,000*l.*, to say nothing of indirect returns. Hence, they fully maintain their reputation as the most remunerative and beneficent public works in the world. Among the artificial waterways of India, the Chenab canal is a remarkable work commanding more that 3,000,000 acres, of which nearly 2,000,000 acres were actually irrigated last year, and yielding a net return to the State of 23 per cent. on the capital outlay. It has enabled the Government to redeem 1,805,000 acres of grazing land, increasing the population of the same area from 800,000 in 1901 to 1,200,000 in 1905. The value of the crops raised by irrigation from the canal is estimated at about 3,700,000*l.*, and a branch line has been built to transport surplus produce to the North-Western Railway. This line paid, in 1904, a dividend of 22·7 per cent. on capital. The aggregate value of the exports from the port of Karachi of goods carried by the railway in question is estimated at 2,750,000*l.*, which is considerably more than the cost of the canal and railway together. Results such as these amply justify the position of those who have for years past steadily pressed upon the Government of India the desirability of, and the necessity for, a liberal irrigation programme.

UNITED STATES CEMENT TRADE.—Official statistics just published show that the value of imports of cement into New York has again fallen from 75,000*l.* in 1903 to 24,400*l.* in 1904, and the total imports into the United States have decreased in the same period from 605,000*l.* to 277,000*l.* The report on the production of cement in the United States in 1903 showed that the total production of hydraulic cement was about 29,900,000 barrels, showing an increase of over 4,000,000 barrels as compared with 1902. Of these, 22,350,000 barrels were Portland cement, 7,030,000 barrels natural rock cement, and 526,000 barrels Pozzuolana or slag cement. The increase in the production of Portland cement resulted in a glutted market; a large quantity remained over at the close of the year 1903, and prices fell in consequence. Pennsylvania is the largest producer, having seventeen works with an out-turn in 1903 of 9,754,000 barrels. In New Jersey there are three works, which produced 2,700,000 barrels, and in New York twelve works with a production of 1,603,000 barrels. In 1904 the trade was greatly depressed; one of the works in New Jersey closed till the demand should improve, and others were working on short time. The price fell to about 85c. (3s. 6½d.) per barrel, but at a meeting of manufacturers in December it was resolved to raise it to $1, or a little over 4s., so as to avoid working at a loss.

No. 17, FLEET-STREET.—The rehabilitation of the front of the old house is being carried out by Mr. W. Downs, of Walworth, contractor. The front, and the ceiling of the large room on the first floor, reputedly the council chamber of the Duchy of Cornwall, *temp.* Henry, Prince of Wales, in the XVIIth century, are being restored and repaired at South Kensington Museum, and will be replaced in their former positions.

INCORPORATED CHURCH-BUILDING SOCIETY.—This Society held its usual monthly meeting on Thursday, the 18th inst., at the Society's House, 7, Dean's-yard, Westminster, the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Handsworth, St Peter, near Birmingham, 100*l.* for the first portion; Raynes Park, St. Saviour, Surrey, 135*l.* for the first portion; Slough, St. Paul, Bucks, 200*l.*; and Upper Edmonton, St. John, Middlesex, 250*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Bleddfa, St. Mary, Radnors, 20*l.*; Fen Drayton, St. Mary, near Cambridge, 10*l.*; Kirtlington, St. Mary, near Oxford, 20*l.*; Llandrindod Wells, Holy Trinity, Brecon, 150*l.*; Rushall, St. Matthew, near Pewsey, Wilts, 20*l.*; Stanton Harcourt, St. Michael, near Eynsham, Oxfordshire, 35*l.*; and Sutton Montis, Holy Trinity, near Sparkford, Somerset, 15*l.* The following grants were also paid for works completed:—Over, St. Chad, Cheshire, 60*l.*; Herbrandston, St. Mary, near Milford Haven, 20*l.*; Skewen, near Neath, Glam., 30*l.*; and Hordle, near Brockenhurst, Hants, 40*l.* In addition to this the sum of 140*l.* was paid towards the repairs of fifteen churches from trust funds held by the society.

FOUNDLING HOSPITAL CHAPEL.—The Committee of the Foundling Hospital, using the opportunity given them by the urgent need of repair to the windows of the chapel, have rearranged the coats of arms of past and present governors of the hospital, which composed the greater part of the glass, and have substituted a delicate antique glass for the gaudy and unsuitable designs formerly there. The old small panes formed of cast-iron bars, of a comparatively recent date, together with the stained-sheet glass, have been entirely removed, and wrought-iron stanchions supporting the leaded glass introduced. The coats of arms are now enclosed in oval leaded frames, and are disposed about the field of clear glass and the intervening spaces; semi-circular heads and borders are decorated with wreathing of a Renaissance type in gold and brown tints. The work has been carried out by Messrs. James Powell & Sons, of Whitefriars, in conjunction with the resident surveyor of the hospital, Mr. John B. Chubb.

LONDON BUILDING ACTS (AMENDMENT) BILL.—A circular letter is being sent to the Metropolitan Borough Councils on behalf of the conference of local authorities which recently sat, asking the councils to embody the views expressed in the following resolutions in any reply which is sent to the London County Council on the subject of the London Building Acts (Amendment) Bill:—

(*a*) "That, with reference to the communication recently addressed to the Metropolitan Local Authorities on the subject of the amendment of the Building Acts, this conference desires to reiterate the view expressed at its former meeting, that before any amending Bill is drafted the whole question of the administration of the Acts should be reported upon by a Royal Commission, in order that the new legislation may not only provide for the consolidation as well as the amendment of the existing law, but may ensure a substantial devolution of the administration of the Acts from the central to the local authorities."

(*b*) "That it be suggested to the Metropolitan Local Authorities that they should, in replying to the communication of the London County Council, make it clear that no Amendment Bill will be deemed satisfactory which does not provide for all administrative duties under the Acts which can be efficiently discharged by the local authorities being transferred to those bodies in accordance with the views expressed by the Royal Commission in 1894."

OLD TOMBS AT ABERDEEN.—The Visiting Committee of the heritors of Old Machar, appointed to visit the St. Machar Churchyard, Aberdeen, have had under consideration a report from Mr. Kelly, architect, on the condition of the tombs of Bishop Lichtoun and Bishop Dunbar, and the means that might be taken for their preservation. The Committee recommend the heritors that, with respect to Bishop Lichtoun's tomb, the effigy and the part bearing the inscription be taken inside the cathedral, and that the vacant space be built up and an inscription placed there stating whose tomb it was. With respect to Bishop Dunbar's tomb the committee have deferred decision.

THE HOUSING OF THE POOR: CONFERENCE IN LEEDS.—Under the auspices of the National Housing Reform Council and the Leeds Trades and Labour Council, a conference to consider the housing of the poorest of the poor took place on the 17th inst. in the People's Hall, Leeds. In the circular convening the meeting it was stated that, according to the Census of 1901, there were in Leeds 782 one-room homes, 12,432 two-room homes, 16,725 three-room homes, and 23,594 four-room homes. Adopting the Census standard of overcrowding, viz., the presence of more than two persons to one room, more than four persons to two rooms, and so on, the figures showed no less than 16,558 of the dwellers in one and two room homes were overcrowded, while 26,681 of the dwellers in three and four room homes were overcrowded The meeting was presided over by Mr. T. Waud, President of the Trades Council. The chairman said it was clear that the condition of the poorest of the poor must be looked after by those who were better off. It was obviously the duty of the municipal authority to see that the homes of the very poor were healthy. With regard to the cost, it ought to be borne in mind that it would be better for a municipality to spend money in this direction than on many other objects. Some dwellings were not fit for even one person to live in. While the housing problem was left to the speculative builder the aim would be to get as big a return as possible for a small outlay. The corporations were the only bodies that could deal with the problem effectively.—Mr. Aldridge said it was desirable to educate public opinion in such a way as to make people wonder fifty years hence how it was possible for back-to-back houses to be in existence at the opening of the XXth century. While much had been done by the Leeds City Council, especially in regard to the Quarry Hill district, there remained still much to be done. One way of solving the problem was the raising of the wages of the poor.—Mr. Connellan moved a resolution in favour of the appointment of a committee to consider the best methods of improving the housing needs of the poorest of the poor. Mr. T. C. Wilson seconded the resolution. He Still he was in favour of the Corporation building houses, and letting them at a possible loss to the ratepayers, would be that an employer of labour might get a man to work for less than might otherwise be the case. Still he was in favour of the Corporation building these houses. The resolution was unanimously adopted. It was agreed to invite leading citizens to become members of the committee, and to hold another conference on a date to be fixed upon.

CAPITAL AND LABOUR.

NEWCASTLE BUILDING TRADE DISPUTE.—A round table conference was held on the 17th inst. at the offices of Messrs. Oliver, Leeson, & Wood, in Mosley-street, Newcastle. The conference was taken part in by representatives of the masters and men, together with Messrs. Leeson & Dyson, and it lasted for two and a half hours. Though it was hardly possible for anything to be done in the way of bringing the dispute immediately to a close, some progress was made, and there are hopes that a settlement will be arrived at in a short time. The general principles affecting the different trades were discussed, and the meeting was adjourned, it being decided that sectional conferences should be held. This means that the masters, together with Messrs. Leeson & Dyson, will meet each trade separately in order to discuss matters which particularly affect that trade. From the tone of the discussion it was evident that there was a prospect of mutual concessions being made, and thus there is a belief that the dispute will end speedily and reasonably.—*Newcastle Chronicle.*

THE EDINBURGH JOINERS' STRIKE.—With regard to the decision of the Edinburgh joiners to accept the offer of arbitration or mediation made by the Lord Provost (Sir Robert Cranston), through Councillor Currie, it is understood that the Masters' Association have agreed to take no notice of the offer, and not to entertain any proposal for arbitration.

Legal.

ACTION BY ARCHITECTS FOR FEES.

IN the King's Bench Division, on the 19th inst., the hearing was concluded, before Mr. Justice Lawrance and a special jury, of the case of Meaby and another *v.* Lloyd and others (trustees of the Hearts of Oak Benefit Society).

In this case the plaintiffs brought the action to recover from the defendants 3,374*l.* for fees and work done as joint architects for the Hearts of Oak Benefit Society. The defendants pleaded a denial of liability on the grounds that the plaintiffs were invited to send in plans for a new building to be erected in the Euston-road, the cost of which was not to exceed 55,000*l.*; that the plaintiffs' plans having been accepted by the board of delegates of the Society they were asked to make certain alterations; that the proposed building with the alterations could not be erected for less than 95,000*l.*; that the plaintiffs warranted that their design, with the alterations, could be carried out at a cost within 10 per cent. of their original estimate—and that was the basis of their contract. The defendants also counter-claimed for 1,240*l.*, fees they had paid to a quantity surveyor in connexion with plaintiffs' plans.

Mr. Spencer Bower, K.C., Mr. Ernest Wild, and Mr. Artemus Jones appeared for the plaintiffs, and Mr. Acland, K.C., and Mr. Spence for the defendants.

Mr. Spencer Bower, in opening the plaintiffs' case, said it was an action for fees in relation to new offices of the defendant Society in the Euston-road. He said that in 1901 the defendants employed Mr. Meaby to get a site for the new building, and then they voted 55,000*l.* for the building, and invited a competition in designs. The plaintiffs competed, and their design obtained the second award in the competition. The Society afterwards adopted the plaintiffs' design. The Society said that if the design could not be carried out within 10 per cent. of the estimate, then the plaintiffs were not to be paid any fees. The case for the plaintiffs was that the building could have been erected from their designs at the estimated cost, but the building was very much altered, and the conditions of the competition did not apply. All the designs of competitors were drawn on the supposition that the building line would be that of the Women's Hospital, Euston-road. The County Council would not consent to that, and the building had to be set back 25 ft., which involved a new set of plans and drawings. On December 31 Mr. Sidney R. J. Smith, an architect, reported to the sub-committee that the building, according to plaintiffs' design, could be erected for 46,000*l.* On May 22 there was a resolution adopting the plaintiffs' design. On May 24 Mr. Meaby proceeded with the revised plans, and was retained for that purpose by the building sub-committee. On June 5 the executive council met and resolved that the plaintiffs' designs for the new offices should be accepted, and that they should proceed with the work with all diligence. On June 10 they wrote to the plaintiff as follows:—"Please therefore take notice that you will proceed with all dispatch in completing the requisite plans, etc., for which the usual percentage will be paid. Messrs. Fortune & Bromage will wait upon you with regard to the alteration of the plans." After an enormous quantity of work was done, the defendant Society refused to pay the plaintiffs anything. It was said that the plaintiffs had not complied with the conditions of the competition. That might be true, but the plans sent in by the plaintiffs were with reference to a building in an altered state, and the conditions of the competition did not apply.

Mr. Michael Charles Meaby, examined, said he was an architect and surveyor, and an Associate member of the Institution of Civil Engineers. From February, 1899, until June, 1903, he was surveyor for the defendant Society. In April, 1900, he did certain work in connexion with the purchase of the site on the Euston-road, and also in negotiating with the owners of the property on that site. In August, 1901, the defendant Society invited competitive designs for the proposed new building on that site. The candidates were invited to send in questions. There was a note also sent out to the competitors that they were to assume that the front building line was to come into the line of the Women's Hospital. That line was made the basis of the competition. Another condition of the competition was that no alternative design was to be sent in. Upon that basis the cost of executing the design was not to be more than 10 per cent. in excess of 45,000*l.* There was a good deal of discussion as to the frontage line, viz., as to whether he was to keep to the existing building line or as to whether he was to get the consent of the London County Council to go 25 ft. further forward in line with the Women's Hospital. Mr. Fortune was a member of the building committee, and subsequently of the sub-committee. After discussion, it was decided to adopt Mr. Fortune's view, and that the building line in the competition should come forward. In conjunction with Mr. Webbe he sent in a design for the competition, and that design proceeded on the line of the Women's Hospital. He sent that design in on December 20, 1901. He sent in with that design a statement of cubes, a brief estimate, and descriptive report in accordance with the conditions. It was a condition of the competition that the designs should be sent in anonymously. On the statement as to the cubic contents, he calculated the price at 1s. per cubic ft., and that worked out at 46,048*l.* A building from that design could have been erected for the price he had put upon it. The London County Council decided that they could not have that building line on March 8, 1902. Mr. Sidney Smith awarded their design the second premium, and he stated that he considered the estimate of the cost was right. On June 10, 1902, he received a written retainer from the Society,

signed by their secretary. That was after it was known that the frontage line would have to go back. What rendered the alteration of the plan necessary was the setting back of the frontage line, and the requirement of the defendant Society for the same accommodation in a smaller area. He received his instructions from Mr. Fortune, the Borough Engineer of Bath, and Mr. Bromage, a builder and contractor, of London-road, Worcester. In the conditions as to the designs the delegates' hall was to come on the first floor of the main building. That was afterwards altered, the idea being to utilise the forecourt, which was of considerable area, to put the delegates' hall under the ground. In March, 1902, it was found that the competitive design could not be carried out because of the alteration of the frontage line. On June 10 he received instructions, telling him to go on with the requisite plans. He was never asked to make any estimate on the revised plans. The work he was now suing for was the general rearrangement and planning of the entire building. He did all the work that was necessary to allow the designs to be carried out. On October 2, 1902, his working drawings were approved by Mr. Fortune and Mr. Bromage. Tenders were invited in January, 1903, for the work. On February 23, 1903, he prepared drawings to get the consent of the County Council to allow projections. He charged for that work twenty guineas. The other ten guineas he had charged for was in respect of work in connexion with the party-wall. On April 15 the secretary asked him to prepare a report on the subject of the lowest tender, being 95,500*l*. He sent a report on April 18 to Messrs. Fortune and Bromage, and on the 21st he and Mr. Webbe drew out a statement dealing with the question of the increased cost. The report showed that the alterations from the competitive design increased the cost by 40,625*l*. He attended before the delegate board on May 21, 1903. The excessive cost was divisible into parts—structural, decorative, and provisional. He explained all this to the delegate board. On June 8 he received a letter from the secretary that the delegate board had passed a resolution that his services should terminate as from June 30 then next, and asking him to send in his account. He did so and that was the account he was now suing on. He had not been paid any portion of his account. The 2½ per cent. on the 95,500*l*., the amount of the lowest tender that he had charged, was according to the scale of the Royal Institute of British Architects. He also charged another ½ per cent. for the ½-in. detailed drawings. It was the custom to make such a charge, as the plans were essential for the carrying out of the building, and for the efficient taking off of the quantities.

Cross-examined by Mr. Acland,

Do you say that you are entitled to this percentage on any sum to which the tenders amount?—Yes; on the amount of the lowest tender.

Irrespective of the demands of your client?—Yes; unless you had some arrangement before.

And your case is that you had no limit as to the amount?—No.

So that if you had chosen to prepare plans for a building which would cost 200,000*l*. the committee, being desirous of spending only 55,000*l*., would have had to pay you 5,000*l*. for the satisfaction of rejecting your plans?—No; because that would be ridiculous.

Have you yourself, personally, any architectural experience at all?—Yes.

How long?—Nearly twenty years.

Have you ever designed a building of this kind before?—Not of this particular kind.

Did you design this building yourself?—Yes; with my colleague.

Did you draw a single plan yourself?—The whole work was done jointly.

Are not these plans the work of Mr. Webbe?—Not entirely. He did probably half the work.

Will you swear that in any of these plans which have been prepared you put pen or pencil to paper?—Yes.

Mr. Webbe is not a partner of yours, is he?—Yes; for this business.

You took him on to do this work?—No; as a partner, yes.

What did you want a partner for?—It is customary for architects to join together in these things.

I put it to you that you took in Mr. Webbe, who was a skilled architect, to do this work nominally as your partner, and for this job alone?—Yes; for this job alone.

Cross-examination continued,

He was born in 1839. He first of all joined the army, and afterwards became assistant-surveyor to the Vestry of Chelsea. He had charge of the detached portion of the Chelsea parish.

Your salary was 80*l*. a year?—No; 120*l*. odd. That was in 1884. Had you had any architectural experience then?—Yes; various stores and private houses.

Further cross-examined, the witness stated that he then became surveyor to St. Luke's Vestry, and, in 1887, became surveyor to a building society. His employers at St. Luke's objected to his doing private work, and he gave an undertaking that he would not do it. He, however, did private work, and the committee reported that he had broken his undertaking. He resigned that appointment, but he was not called upon to resign it. He resigned because he found that he had not the confidence of the committee. While he was there questions were raised as to his experience and capacity for the work on which he was engaged, and, in order to satisfy the members of the board, he issued a circular addressed to them. In that circular he stated, amongst other things, that, in 1859 and 1860, he was employed under Colonel de Vere in building Fort Abraham. He became surveyor of the defendant Society in 1899. That Society was composed of working men—men who paid contributions for sick and funeral benefits. It was his duty to advise the Society as to the securities on which it advanced its money. He was paid for that advice. In the course of his duties there he was brought into contact with a man, named Geddes. He and Geddes did not work that business for the benefit of Meaby and Geddes.

Is it not the fact, to your knowledge, that nearly all the securities introduced by Geddes and advised on by you proved a loss to the Society?—No.

Further cross-examined, the witness stated that, in 1889, he was instructed to find a site by the defendant Society, and he saw the one in the Euston-road. He reported on the matter in April, 1900. He did not know who the owner was then. He was in communication with Geddes. He knew now that it belonged to Lord Southampton. He did not know Geddes in reference to this business before May, 1900. He believed Geddes was the owner. He said to the Council that he was bound in honour not to disclose the owner's name. He made a formal offer to Geddes on June 25 of 36,000*l*., which was accepted. The contract of sale of July 11 from Lord Southampton to Geddes was for 30,000*l*. The contract to the Society was on the same day. He never received a penny from Geddes. It was not his signature on the banknote produced. He did not receive that note from Geddes on August 11. He may have paid a 100*l*. note into his bank on August 13. He could not say where he got the note from. He did not know whether that note was one of twenty which Geddes got from his solicitors. He could not remember how many 100*l*. notes he received that autumn. He did not receive 1,900*l*. from Geddes as his share of the plunder in the purchase of the site. He purchased a moiety of the profits of a farm from Geddes. He would swear that he never received the nineteen 100*l*. notes from Geddes. He could not say from whom he got them. He was not a member of any recognised architectural society. He had suggested that a rearrangement of the designs would get rid of the conditions. He prepared a specification with Mr. Webbe. He thought he was entitled to depart from the guide laid down as to the cost of building. He was not told that the building he was proposing could not be put up for 80,000*l*. By the change in the character of the materials it added 12,000*l*. to 15,000*l*. to the cost of the building. The quantity surveyor could change the quality of the materials. The interior finish of a building was left to the discretion of the architect. Marble and granite were used in the building which would add to the cost. The sub-committee were the authority for all the changes. On May 21, 1903, he stated to the delegates that he received no instructions for the alteration from any member of the Council.

After further evidence in cross-examination had been given, Mr. Spencer Bower had a conversation with Mr. Meaby, and eventually told his lordship that he had informed his client that the only terms upon which he would consent to further represent him in the case would be that, in his address to the jury, he should not represent Mr. Meaby as being worthy of credit on any oral testimony which he had given which was contradicted by the evidence of any independent witness on the other side. The learned counsel said that he had come to that decision after hearing the revelations the gentleman had made in the witness-box.

His lordship: I need hardly tell you that the matter will not end here.

Mr. Spencer Bower: I cannot help that. My position is this, I shall continue to conduct the case on those lines, and, if need be, I shall ask the jury to find from the documents and the correspondence—however unreliable this gentleman as a witness may be—that there is a contract on the letters.

Mr. Acland said he was in a position to prove that Mr. Meaby had received 2,000*l*. from Mr. Geddes on the transaction as to the sale and purchase of the Euston-road site. At the end of the case he should ask leave to amend the counter-claim, and to prove this fact.

His lordship said that, if that could be proved there was only one inference to be drawn by the jury.

At this stage the foreman of the jury intimated that he and his colleagues did not think it worth while to go further with the case.

His lordship said he had been of that opinion a long time.

Mr. Spencer Bower said he thought, in justice to Mr. Webbe, that that gentleman ought to be allowed to go into the witness-box so that he might deny he had any complicity with Mr. Meaby in the matters deposed to.

Mr. Acland said he would admit that Mr. Webbe was a victim of circumstances. He thought, in fairness to Mr. Webbe, that he ought to be allowed to go into the witness-box.

Mr. Alfred Alexander Webbe, examined by Mr. Wild, said he was one of the plaintiffs, and was in partnership with Mr. Meaby as to the preparation of the plans in question. He had no knowledge of the matters put to Mr. Meaby in cross-examination that day. He knew nothing about anything except the working drawings of the Society. He knew nothing about the alleged transaction with Geddes.

Mr. Acland said he did not dispute Mr. Webbe's word at all, and had no questions to ask him.

Mr. Spencer Bower said that his learned friend's defence against Mr. Webbe would be that there was no contract. He (Mr. Bower) could not say that the Society had any contract, personally, with Mr. Webbe.

Mr. Acland said that there remained the defendants' counter-claim. The defendants had been put to great expense with regard to these abortive plans.

Mr. Spencer Bower said that, in the circumstances, he was afraid he should have to resist the counter-claim.

On the suggestion of his lordship, Mr. Acland stated that he would withdraw the counter-claim, and, in the result, a formal verdict was entered for the defendants on the claim, and judgment was entered accordingly, with costs, the counter-claim being withdrawn, without costs.

His lordship said he should hand over the documents which he impounded to the Public Prosecutor.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

11,308 of 1904.—J. McWHAN: *Water-closets.*

This relates to a method of freeing water-closets from odour when in use, by branching a ventilating pipe out of the flush pipe close to arm of basin, thus making the flush rim of the basin to act as a ventilating rim. A box supplied with a gas jet is fixed in the ventilating pipe. When lit, this causes an up-draught and conveys the odour away from the room.

12,307 of 1904.—R. SHARP: *Window Sashes.*

In carrying out this invention, a rack is secured to each side style of the sashes, the teeth of the upper and lower rack on each side being arranged to engage a pinion mounted in a suitable side frame, casing, mullion, or the like, preferably at a point opposite the meeting rails of the two sashes, so that when one sash is operated the other is also moved in the opposite direction a like extent. A locking bolt to limit the vertical play of the sashes is arranged on the side framing or mullion, preferably on the left-hand side thereof, immediately below the meeting rails. One rack is perferably made a little wider than the other, and has a number of holes bored or otherwise formed therein at convenient distances; for example, one hole is arranged to receive the bolt when the sashes are quite closed, another when slightly opened for ventilating purposes, and others at any convenient short distances as desired, until the last one coincides with the fully opened sashes.

13,204 of 1904.—W. H. HOYLE and T. BARKER: *Means for Controlling the Working of Hoists or Lifts.*

This relates to means for safeguarding the working of hoists, comprising a reciprocating bar working the strap forks through gearing, means for locking the doors from the inside, and disengaging same from the cage, and means for locking the reciprocating bar when any door is opened.

14,223 of 1904.—C. MAJOR: *Roofing Tiles.*

Rectangular roofing tiles, having on the upper and under surface ribs and recesses so formed

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

that when the tiles are placed in position in roofing the ribs on one tile engage in recesses in adjacent tiles and form channels by which water can flow off the tiles, together with any water of condensation which may form on the end surfaces of the tiles, and so that wind, snow, or water is prevented from entering to beneath the tiles.

14,339 of 1904.—R. ILES: *Sliding Window Sashes.*

Sliding window sashes, consisting in the combination of a casement, taper tongues, or slides thereon, grooves in the sashes adapted to engage with the tongues or slides, and means for holding the sashes in any desired position, recesses in said grooves, and springs in said recesses to engage with the inclined face of the tongues or slides.

14,436 of 1904.—H. F. WILSON: *Fireplaces.*

This invention relates to open fireplaces of the register grate type, and its object is to construct and arrange the fuel holder portion of the fireplace in such manner as to form a slow combustion grate of simple and efficient character. According to this invention, the fuel holder portion of the fireplace comprises a downwardly-sloping base member which is provided with upstanding side portions, and an inwardly sloping back portion, whilst transversely across the front edge of the said base member is provided a rib or rim which stands slightly above its front upper surface, whilst the said rib or rim is of such depth that its base comes in a horizontal line with the back edge of the fuel holder. The fuel holder, when placed in position within the fireplace, is so arranged that the upper surface of its front cross rib comes in line with or on the same plane as the tiled hearth or floor level, when the lower portion of the holder is sunk below the floor level so as to form a chamber fire, the air to support combustion passing thereto by way of the upper front.

15,139 of 1904.—H. H. LAKE (F. S. Miller): *Hoisting and Conveying Apparatus.*

A hoisting apparatus, consisting in the combination with a hoisting rope, a lifted support from which it is pendent, and a swinger guide engaging the pendent portion of the hoisting rope below said lifted support, a swinger rope extending from said swinger guide in the plane of swing, and the following means whereby said swinger guide and the pendent portion of said hoisting rope are moved laterally to the plane of swing, viz., two ropes, one of which forms a running connexion with said hoisting rope, and the other with said swinging rope, and each of which extends away from the plane of swing.

27,897 of 1904.—A. E. EDWARDS (Society of Gillet, Grain, & Nicolas): *Glass Plates or Facing Tiles for Covering Buildings, and the like.*

The invention has for its object the application of plates, pieces, and panels of glass, cast, blown, etc., of all shades of colour, transparent, or opaque, which are to be employed in the form of plates upon the outer surfaces of bricks, tiles, and also as decorative pieces for façades. All the glass plates or pieces are provided with attachments at their backs or edges, cast or moulded with the corresponding pieces of which they form a part, or made separately of metal or other material embedded in the glass. The attachment for holding the glass plates or tiles upon the bricks are either cast with the plates or are embedded in them, and may be of any suitable shape; if embedded in the back of the glass plates, they will be of metal or other material, and in general will be in the form of bands with lugs.

12,625 of 1904.—E. P. WEELS: *Re-inforced Concrete Construction.*

A metallic skeleton for re-inforcing concrete constructions, comprising a number of rods consisting of two cylindrical parts connected together by an intermediate diaphragm or web and a series of hanger bars provided with cup-like depressions, and secured at one or both ends to the rods by being bent around the whole rod or being passed through the diaphragm and bent around one-half of the said rod.

14,662 of 1904.—A. L. P. CHASLES: *Sheet-metal Roughened Facings for the Treads of Stairs, and the like.*

This invention relates to sheet-metal roughened facings for the treads of stairs, and the like, intended to prevent slipping. The object of the invention is to prevent too rapid wear of the projections situated near the edge of the facing; for this purpose there are formed in the plate, a little beyond the external row of truncated conical projections such as usually provided, rounded bosses which are preferably a little shallower than the said projections. In the application of facings provided with these bosses to the treads of stairs, for example, the foot of the person ascending the stair comes in contact with the said bosses placed near the nosings of the step, so that the first row of truncated conical projections is protected by said bosses.

1,725 of 1905.—F. LOBNITZ: *Apparatus for Breaking up or Cutting Rocks, Stones, or Earth Under Water or on Dry Land.*

A rock-cutting apparatus, consisting in the combination of a rock cutter, a rope, or its equivalent, for raising the rock cutter, sheer legs or equivalent structure, a hoisting winch, a clutch on the winch, and a device arranged on the sheer legs or equivalent structure, and connected with a weight or its equivalent whereby, when the hoisting rope slackens on the cutter striking the rock, the weight or its equivalent is allowed to act, and automatically applies the clutch.

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 9.—By VERNON & SON (at Thame).

Stokenchurch, Bucks. — "Gurdon's Farm Estate," 213 a. 0 r. 2 p., f.	£1,850

May 11.—By SEDGWICK, SON, & WEALL (at Boxmoor).

Bovingdon, Herts.—High-st., butcher's shop and premises, with slaughter-house, orchard, etc, c., y.r. 26*l.*	500
Hemel Hempstead, Herts.—34 and 35, Green-end, u.t. 341 yrs., g.r. nil, w.r. 13*l.*	320

By HARRIE STACEY (at Redhill).

Redhill, Surrey.—57, Somerset-rd., f., e.r. 30*l.*	380
Earlswood, Surrey.—Earlsbrook-rd., "Kingscote" and "Roath," f., y.r. 66*l.*	950
Earlsbrook-rd., freehold building plot	190
Earlsbrook-rd., freehold building plot	410

By BUCKLAND & SONS (at Burnham).

Burnham, Bucks.—Shepherd's-hill, an enclosure of land, 7 a. 1 r. 35 p., f.	800
1 to 29, Fairfield-cottages, f., y.r. 386*l.*	4,940
Church-st., seven freehold cottages, w.r. 76*l.* 2s.	780
Cippenham Green, fifteen cottages, f., w.r. 145*l.* 8s.	1,640
Cippenham, four houses, shop, and 1 cottages, f., y.r. 80*l.*	1,010
Cippenham, five freehold building plots	219
"Cippenham Place Farm," 12 a. 2 r. 27 p., f., y.r. 60*l.*	1,275

May 12.—By J. A. EGGAR (at Liphook).

Headley, etc., Hants.—Portions of the Headley Estate, about 48 acres, f. (in lots)	4,255

May 15.—By J. H. BETHELL.

Penge.—24 and 26, Hawthorne-gr., f., w.r. 41*l.* 12s.	340
Walthamstow.—56, Forest-rd., f., w.r. 28*l.* 12s.	390

By ALLAN BOOTH.

Camden Town.—197 and 199, Camden-rd., u.t. 34 yrs., g.r. 25*l.*, y.r. 155*l.*	1,200

By E. & J. SWAIN.

Bayswater.—16 and 17, Denbigh-mews, and 24, Denbigh ter., u.t. 39½ yrs., g.r. 10*l.*, y.r. 93*l.* 10s.	580

By E. H. HENRY.

Clapham.—108 and 114, Cavendish-rd., u.t. 75 yrs., g.r. 16*l.* 16s., y.r. 70*l.*	720
4, Grove-rd., u.t. 75 yrs., g.r. 11*l.* 11s., y.r. 50*l.*	510
48, Lynette-av., u.t. 79 yrs., g.r. 7*l.* 10s., y.r. 42*l.*	400
Peckham.—Rye-la., l.g. rents 80*l.* 17s., u.t. 51 yrs., g.r. 40*l.*	720
St. John's Wood.—Abbey-gdns., l.g. rents 64*l.*, u.t. 34 yrs., g.r. 6*l.*	910

By ORGILL, MARKS, & BARLEY.

Peckham.—Rye-la., the "Odd Fellow's Arms" b.h., f., y.r. 260*l.*	7,500
Mile End.—Globe-rd., the "Queen Victoria" b.h., f., y.r. 40*l.*	1,900
Marylebone.—Shroton-st., the "Perseverance" p.h., u.t. 46½ yrs., y.r. 88*l.*	1,650
Hackney-road.—No. 460, the "Norfolk Arms" b.h., u.t. 40½ yrs., y.r. 45*l.*	500
Poplar.—Chrisp-st., The "Early Bird" b.h., u.t. 13½ yrs, y.r. 50*l.*	750

By BUCKLAND & SONS.

Ashford, Middx.—Stanwell-rd., "Ford House" and 12 a. 0 r. 34 p., f., y.r. 131*l.*	£3,000
Kentish Town.—55 and 57, Holmes-rd., area 14,850 ft., f., p.	2,050
61 and 63, Holmes-rd., the "Malt and Hops" b.h., and builder's workshop and premises, f., y.r. 28*l.*	925

May 16.—By G. BRINSLEY & SON.

Ealing.—7, Coldershaw-villas, u.t. 74 yrs., g.r. 6*l.* 6s., e.r. 36*l.*	395

By H. DONALDSON & SONS.

Dalston.—79, Albert-rd., u.t. 45 yrs., g.r. 5*l.*, y.r. 34*l.*	395

By G. HEAD & CO.

Hammersmith.—165, Hammersmith-rd. (The London Laundry Co.), beneficial lease for 38 yrs., y.r. 180*l.* (including goodwill, plant, machinery, etc.)	1,010

By HOBSON, RICHARDS, & CO.

Brixton.—15, 17, 18, and 19, Trelawn-rd., u.t. 74½ yrs., g.r. 26*l.* 8s., y.r. 132*l.*	1,045
Norwood.—60, Enmore-rd., u.t. 66 yrs., g.r. 8*l.* 5s., y.r. 40*l.*	300

By J. S. MOTION.

Brixton.—91, Upper Tulse-hill, f., y.r. 70*l.*	1,000
99, Upper Tulse-hill, u.t. 35½ yrs., g.r. 7*l.* 10s., y.r. 50*l.*	405
130, Upper Tulse-hill, u.t. 33½ yrs., g.r. 17*l.* 10s., y.r. 55*l.*	375
Brondesbury.—14 and 16, Loveridge-rd., f., y.r. 75*l.*	1,150

By D. SMITH, SON, & OAKLEY.

Leeds, Kent.—"Rutland Cottages" (two), and 20 a. 2 r. 3 p., f.	510
Billericay, Essex.—"The Basildon Estate," 535 a. 0 r. 20 p., f.	4,100

By STANLEY PARKES & BROWN.

Hornsey.—343 and 345, Wightman-rd., u.t. 76½ yrs., g.r. 13*l.*, y.r. 72*l.*	650

By THURGOOD & MARTIN.

King's Cross.—35, Argyle-st., u.t. 29½ yrs., g.r. 5*l.*, y.r. 50*l.*	455
Gray's Inn-rd.—38, Frederick-st., u.t. 17½ yrs., g.r. 6*l.*, y.r. 55*l.*	355
64, Frederick-st., u.t. 17½ yrs., g.r. 7*l.*, y.r. 54*l.*	345
Notting Hill.—93, Hereford-rd., u.t. 45½ yrs., g.r. 12*l.*, y.r. 75*l.*	540
51, Lansdowne-rd., u.t. 37½ yrs., g.r. 12*l.* 5s., e.r. 75*l.*	630
Brixton.—14, Hayter-rd., u.t. 61½ yrs., g.r. 12*l.* 10s., e.r. 50*l.*	320

By WOOTTON & GREEN.

Battersea.—Meyrick-rd., f.g.r. 16*l.* 10s., reversion in 53 yrs.	390
Knox-rd., f.g.r. 4*l.* 10s., reversion in 58 yrs.	105
Bayswater.—Shrewsbury-rd., f.g. rents 40*l.*, reversion in 51 yrs.	1,280
Talbot-rd., f.g. rents 70*l.*, reversion in 51 yrs.	2,245
St. Stephen's-sq., f.g. rents 96*l.*, reversion in 50 yrs.	3,000
Westbourne Park-rd., The "British Oak" p.h., f.g.r. 60*l.*, reversion in 51 yrs.	2,100

By ROBERT NEWMAN (at Cranford).

Cranford, Middlesex.—Bath-road, "Highway Close," 13 a. 0 r. 25 p., f.	850

By SPELMANS' (at Yarmouth).

Yarmouth, Norfolk.—52, Marine-parade, f., subject to Corporation g.r. 1*l.* 17s., y.r. 80*l.*	1,600
4, 5, 6, 7, and 8, Wellington-pl., f., y.r. 71*l.*	700
97 and 98, Albion-rd., f., y.r. 20*l.*	210
83, Lancaster-rd., with blacksmith's shop, f., y.r. 23*l.* 8s.	400

By J. S. HOLLAND (at Masons' Hall Tavern).

Billericay, Essex.—High-st., "The Rising Sun" p.h., c., y.r. 95*l.*	3,000

By RODWELL & SON (at Masons' Hall Tavern).

Croxley Green, Herts.—The "Artichoke Inn" and 4 a. 2 r. 21 p., f., p.	4,700
An enclosure of land, 2 a. 0 r. 6 p., f.	300

May 17.—By H. J. BROMLEY.

Forest Hill.—77, Devonshire-rd., f., p.	525

By FOSTER & CRANFIELD.

Holloway.—Hornsey-rd., f.g. rents 37*l.*, reversion in 46 yrs.	960

By WAGSTAFF & SONS.

Highbury.—76, Riversdale-rd., u.t. 65½ yrs., g.r. 6*l.* 6s., e.r. 36*l.*	435
Caledonian-road.—10, Havelock-st., u.t. 50 yrs., g.r. 6*l.*, w.r. 39*l.*	420
Highbury.—Highbury-pk., f.g.r. 80*l.*, reversion in 41 yrs.	1,790

By C. P. WHITELEY.

Spitalfields.—24, 25, and 26, Steward-st., and 15, Duke-st., area 3,300 ft., f.	3,040

By WORSFOLD & HAYWARD.

Hornsey Rise.—487 and 507, Hornsey-rd. (s.), u.t. 80½ yrs., g.r. 36*l.*, y.r. 170*l.*	2,145

By DEBENHAM, TEWSON & CO., with MATTHEWS & GOODMAN (at Winchester House).

Woolwich, Kent.—Thomas-st., f.g.r. 14*l.*, reversion in 7¾ yrs.	1,050
New-rd., the "Pioneer" b.h., f., yr. 52*l.*	1,850
New-rd., f.g.r. 35*l.*, reversion in 69 yrs.	840
New-rd., f.g.r. 15*l.*, reversion in 23½ yrs.	460
Crescent-rd., f.g. rents 77*l.*, reversion in 9 to 18 yrs.	5,280
Conduit-rd, f.g. rents 44*l.* 17s. (increasing to 57*l.* 17s.), u.t. 11¾ to 17¾ and 57¾ yrs.	3,350
Frederick-pl., etc., f.g. rents 65*l.* 10s., reversion in 4½ to 11¾ yrs	6,260
Conduit-rd., f.g.r. 3*l.*, reversion in 22 yrs.	160
Raglan-rd., etc., f.g. rents 23*l.*, reversion in 14¾ yrs.	1,420
Conduit-rd., f g r. 18*l.*, reversion in 8 to 14 yrs.	1,260
Crescent-rd., f g. rents 77*l.* 3s., reversion in 12 to 15¼ yrs.	5,130
Bloomfield-rd., f.g. rents 89*l.* 10s., reversion in 14¾ and 15 yrs.	5,630
Burrage-rd., f.g. rents 73*l.*, reversion in 6¾ to 14¼ yrs.	6,260
Raglan-rd., etc., f.g. rents 57*l.* 15s., reversion in 14¼ to 15¼ yrs.	3,310

Woolwich, Kent. — Burrage-rd., f.g. rents 46*l.* 9s., reversion in 9¾ to 22¾ yrs..... £2,630
Frederick-pl., f.g. rents 23*l.* 2s. 6d., reversion in 5½ to 12½ yrs. 2,190
Frederick-pl., f.g. rents 58*l.*, reversion in 4½ to 13½ yrs. 5,440
Sandy Hill-rd., f.g. rents 45*l.* 10s., reversion in 2½ to 8 yrs. 6,165
St. James'-pl., f.g. rents 64*l.* 13s., reversion in 14¾ to 22¾ yrs. 5,330
Burrage-rd., f.g. rents 48*l.* 15s., reversion in 21¾ to 30¾ yrs. 2,030
Frederick-pl., etc., f.g. rents 36*l.* 14s. reversion in 13¾ to 21¾ yrs. 2,640
St. James'-pl., f.g. rents 34*l.* 15s., reversion in 16 to 22 yrs. 1,960
Burrage-rd., f.g. rents 57*l.* 7s., reversion in 25 to 28 yrs..... 2,600
Cambridge-pl., two plots of freehold land.. 240
Cambridge-pl., f.g.r. 9*l.* 5s., reversion in 19 yrs. 450
Bloomfield-rd., f.g. rents 31*l.* 17s. 6d., reversion in 15½ to 16½ yrs. 1,720
Bloomfield-rd., "Duke of Cambridge" b.h., f.g.r. 15*l.*, reversion in 22½ yrs. 940
Bloomfield-rd., f.g. rents 27*l.* 10s., reversion in 16½ to 18½ yrs. 1,420
Plumstead Common-rd., f.g.r. 59*l.*, reversion in 14¾ yrs. 3,730
Burrage-rd., f.g. rents 43*l.* 15s., reversion in 26½ to 27½ yrs..... 1,970
Cambridge-pl., f.g.r. 15*l.*, reversion in 73½ yrs. 420
Cambridge-pl., f.g.r. 11*l.* 5s., reversion in 18½ yrs..... 530

By WYATT & SON (at Chichester).
Chichester.—21, Victoria-rd., f., w.r. 13*l.* 150
91, Victoria-rd., f., p..... 180

May 18.—By H. C. BIGDEN.
Stockwell.—90, Hargwyne-st., u.t. 69 yrs., g.r. 8*l.* 10s., w.r. 39*l.* 250

By C. C. & T. MOORE.
Whitechapel.—Plummers-row, f.g. rents 40*l.*, reversion in 84 yrs..... 1,000

By NEWBON, EDWARDS, & SHEPHARD.
Camden Town.—12, Stratford-pl., u.t. 39 yrs., g.r. 9*l.*, y.r. 42*l.* 320
Holloway.—25 and 27, Rupert-rd., u.t. 61 yrs., g.r. 10*l.*, w.r. 88*l.* 8s. 410

By OGDEN, SONS, & OLLEY.
Streatham.—44 and 46, Sunninghill-rd., u.t. 34 yrs., g.r. 4*l.*, y.r. 52*l.* 665

By ROGERS, CHAPMAN, & THOMAS.
Pimlico.—46, Hinton-st. (s.), u.t. 19 yrs., g.r. 5*l.* 5s., y.r. 36*l.* 535

By E. W. RICHARDSON.
Muswell Hill —3, Alexandra Park-rd., u.t. 96 yrs., g.r. 8*l.*, y.r. 38*l.*..... 435

By STIMSON & SONS.
Blackfriars.—1 to 6, 64A and 65, Nelson-sq., area 7,000 ft, f., w.r. 386*l.* 3,650
Camden Town.—1, The Ter., u.t. 57½ yrs., g.r. 12*l.*, y.r. 120*l.* 1,000
Streatham.—171, Gleneldon-rd., f., y.r. 42*l.*... 440
Peckham.—13, Oglander-rd., u.t. 70 yrs., g.r. 5*l.*, y.r. 30*l.* 275
67, Bellenden-rd., f., y.r. 30*l.* 490
74, Bellenden-rd., u.t. 73 yrs., g.r. 3*l.*, y.r. 26*l.* 310
Camberwell.—156, Southampton-st. (s.), f., y.r. 70*l.*..... 1,400
Sutton, Surrey.—1 to 4, Reading-rd., u.t. 92 yrs., g.r. 20*l.*, w.r. 93*l.* 12s. 500
Harrow, Middx.—12, Gayton-rd., u.t. 70 yrs., g.r. 6*l.*, y.r. 65*l.* 600

By J. A. & W. THARP.
Stratford.—Crownfield-rd., f.g. rents 22*l.* 10s., reversion in 72 yrs..... 610
12, 14, 16, and 18, Crownfield-rd., f., w.r. 135*l.* 4s 950
Leyton.—40, High-rd. (s.), u.t. 73 yrs., g.r. 4*l.* 10s., y.r. 35*l.* 315
Leytonstone.—Hartley-rd., "Brier Cottage," f., e.r. 35*l.*..... 405
Hartley-rd., two freehold building plots.... 210

By G. TROLLOPE & SONS.
Westminster.—24, Abingdon-st., and 4, College-mews, area 3,300 ft., f., y.r. 570*l.* 14,300

By DANIEL WATNEY & SONS.
Thornton Heath. — London-rd., freehold building estate, 25 a. 0 r. 14 p. 13,000

By T. B. WESTACOTT.
Highgate.—81, Harberton-rd., u.t. 83 yrs., g.r. 6*l.* 10s., e.r. 45*l.* 380

By WEATHERALL & GREEN (at Ealing).
Ealing.—23, Eaton-rise, u.t. 61½ yrs., g.r. 8*l.* 8s., y.r. 47*l.*..... 450

May 19.—By CRAFTER, HARRIS, & Co.
Blackfriars.—65 and 66, Brunswick-st, f., w.r. 104*l.* 955

By FORTESCUE & Co.
Streatham.—34 and 36, Sternhold-av., u.t. 89½ yrs., g.r. 18*l.*, e.r. 90*l.* 700
Norbury.—17 and 19, Norbury-gdns., u.t. 97 yrs.. g.r. 13*l.* 10s., e.r. 70*l.* 570
New Malden, Surrey.—1, Somerset-villas, f., y.r. 28*l.*..... 390

By FURBERS'.
St. John's Wood.—23 and 24, Elm Tree-rd., and 18, Grove End-rd., u.t. 12¼ yrs, g.r. 15*l.* 15s., y.r. 110*l.* 610
Paddington.—44, Brindley-st., u.t. 39½ yrs., g.r. 5*l.*, w.r. 46*l.* 16s. 200

By LESLIE, MARSH, & Co.
Kensington.—5 and 8, Russell-gdns.-mews, f., y.r. 75*l.*..... 880
36, Addison-gdns., f., y.r. 75*l.* 1,010

By NICHOLAS, DENYER, & Co.
Rotherfield Peppard, Oxen.—Freehold riverside building site..... 700

By RAMSAY, WAINWRIGHT, & Co.
Bowes Park.—7, Carlton-rd., u.t. 76 yrs., g.r. 5*l.* 5s., w.r. 33*l.* 16s. 225

By RIDER & SONS.
Fulham.—43, Claybrooke-rd., u.t. 487 yrs., g.r. 7*l.*, w.r. 33*l.* 16s. 220
21 to 29 (odd), Rylston-rd., u.t. 46½ yrs., g.r. 5*l.*, w.r. 101*l.* 8s..... 485

By EDWARD WOOD.
Holloway.—123, Hornsey-rd., u.t. 33½ yrs., g.r. 6*l.* 6s., y.r. 36*l.* £230
Tottenham.—63, Plevna-rd., u.t. 69 yrs, g.r. 5*l.*, y.r. 24*l.* 200
Dulwich.—9, Ashbourne-gr., u.t. 65 yrs, g.r. 6*l.*, e.r. 32*l.* 280
Clerkenwell.—42, Wharton-st., u.t. 21½ yrs., g.r. 4*l.*, y.r. 45*l.* 300
Barnes.—5, Laurel-rd., u.t. 97 yrs., g.r. 9*l.*, y.r. 52*l.*..... 460
Ilford.—1, Hamilton-rd., u.t. 95 yrs., g.r. 5*l.*, w.r. 28*l.* 12s..... 215
29, Howard-rd., u.t. 96 yrs., g.r. 4*l.* 10s., e.r. 24*l.* 14s. 160

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, MAY 26.

Royal Institution.—Professor Julius W. Brühl on "The Development of Spectro-Chemistry." 9 p.m.

SATURDAY, MAY 27.

Institute of Sanitary Engineers. — Visit to the Municipal Works at New Malden. Train leaves Waterloo Station at 2.2 p.m., arriving at Coombe and Malden Station at 2.33 p.m.

MONDAY, MAY 29.

Surveyors' Institution.—Annual General Meeting to receive the Report of the Council and the announcement of the result of the Election of Officers for the ensuing year. 3 p.m.

TUESDAY, MAY 30.

Royal Institution.—The Rev. H. G. Woods, D.D., on "Velazquez: the Court Portrait Painter," II. 5 p.m.

THURSDAY, JUNE 1.

Royal Institution.—Professor J. A. Fleming, M.A., on "Electro-magnetic Waves," II. 5 p.m.

SATURDAY, JUNE 3.

Royal Institution.—Mr. A. H. Savage Landor on "Exploration in the Philippines," I. 3 p.m.

Northern Architectural Association.—Visit to Whitley Schools, S. George's Church, Cullercoats, and Tynemouth Priory, etc.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied **DIRECT** from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) **PREPAID.** To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 22s. per annum. Remittances (payable to J MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

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PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks.	1 10 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 6 6	,, ,, ,,
Facing Stocks ...	2 2 0	,, ,, ,,
Shippers	2 2 0	,, ,, ,,
Flettons	1 7 0	,, at railway depôt.
Red Wire Cuts ...	1 14 0	,, ,, ,,
Best Fareham Red	3 12 0	,, ,, ,,
Best Red Pressed Ruabon Facing	5 0 0	,, ,, ,,
Best Blue Pressed Staffordshire ...	4 2 6	,, ,, ,,
Do. Bullnose	4 7 6	,, ,, ,,
Best Stourbridge Fire Bricks.....	4 0 0	,, ,, ,,
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	12 0 0	,, ,, ,,
Headers	11 0 0	,, ,, ,,
Quoins, Bullnose, and Flats.....	16 0 0	,, ,, ,,
Double Stretchers	19 0 0	,, ,, ,,
Double Headers...	16 0 0	,, ,, ,,
One Side and two Ends	19 0 0	,, ,, ,,
Two Sides and one End	20 0 0	,, ,, ,,
Splays, Chamferred, Squints	20 0 0	,, ,, ,,
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	,, ,, ,,
Quoins, Bullnose, and Flats.....	14 0 0	,, ,, ,,
Double Stretchers	15 0 0	,, ,, ,,
Double Headers...	14 0 0	,, ,, ,,
One Side and two Ends	15 0 0	,, ,, ,,
Two Sides and one End	15 0 0	,, ,, ,,
Splays, Chamferred, Squints	14 0 0	,, ,, ,,
Second Quality White and Dipped Salt Glazed	2 0 0	,, less than best.

BRICKS, &c. (*continued*).

	s. d.	
Thames and Pit Sand.....	7 0	per yard, delivered.
Thames Ballast.....	5 9	,, ,,
Best Portland Cement	27 0	per ton, ,,
Best Ground Blue Lias Lime	20 0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	,, ,,
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 1	,, ,,
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 2½	,, ,,

	s. d.	
Ancaster in blocks.....	1 11	per ft. cube, deld. rly. depôt.
Beer ,, ...	1 6	,, ,,
Greenshill ,, ...	1 10	,, ,,
Darley Dale in blocks...	2 4	,, ,,
Red Corsehill ,,	2 5	,, ,,
CloseburnRedFreestone	2 0	,, ,,
Red Mansfield ,,	2 4	,, ,,
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	,, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. ,,
6 in. rubbed two sides ditto, ditto	2 6	,, ,,
3 in. sawn two sides slabs (random sizes)	0 11½	,, ,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	,, ,,
1½ in. to 2 in. ditto, ditto	0 6	,, ,,
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, ,,
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. ,,
6 in. rubbed two sides ditto	3 0	,, ,,
3 in. sawn two sides (slabs random sizes)	1 2	,, ,,
3 in. self-faced random flags	0 5	,, ,,

	s. d.	
Hopton Wood (Hard Bed) in blocks	2 0	per ft. cube, deld. rly. depôt.
,, ,, ,, 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
,, ,, ,, 3 in. sawn both sides random slabs.....	1 0	,, ,,
,, ,, ,, 2 in. do.	0 8½	,, ,,

SLATES.

in. in.	£ s. d.	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 ,, ,,	13 17 6	,, ,,
20 × 10 first quality ,,	13 0 0	,, ,,
20 × 12 ,, ,, ,,	13 15 0	,, ,,
16 × 8 ,, ,, ,,	7 5 0	,, ,,
20 × 10 best blue Portmadoc	12 12 6	,, ,,
16 × 8 ,, ,,	6 12 6	,, ,,
20 × 10 best Eureka unfading green .	15 17 6	,, ,,
20 × 12 ,, ,,	18 7 6	,, ,,
18 × 10 ,, ,,	13 5 0	,, ,,
16 × 8 ,, ,,	10 5 0	,, ,,
20 × 10 permanent green	11 12 6	,, ,,
18 × 10 ,, ,,	9 12 6	,, ,,
16 × 8 ,, ,,	6 12 6	,, ,,

TILES.

	s. d.	
Best plain red roofing tiles .	42	0 per 1000 at rly. depôt.
Hip and Valley tiles ...	3	7 per doz. ,, ,,
Best Brosely tiles.....	50	0 per 1000 ,, ,,
Do. Ornamental tiles	52	6 ,, ,, ,,
Hip and Valley tiles ...	4	0 per doz. ,, ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6 per 1000 ,, ,,
Do. Ornamental do	60	0 ,, ,, ,,
Hip tiles	4	0 per doz. ,, ,,
Valley tiles	3	0 ,, ,, ,,
Best Red or Mottled Staffordshire do. (Peakes).....	51	9 per 1000 ,, ,,
Do. Ornamental do.....	54	6 ,, ,, ,,
Hip tiles	4	1 per doz. ,, ,,
Valley tiles	3	8 ,, ,, ,,
Best "Rosemary" brand plain tiles.....	48	0 per 1000 ,, ,,
Best Ornamental tiles	50	0 ,, ,, ,,
Hip tiles	4	0 per doz. ,, ,,
Valley tiles	3	8 ,, ,, ,,
Best "Hartshill" brand plain tiles, sand faced.	50	0 per 1000 ,, ,,
Do. pressed.....	47	6 ,, ,, ,,
Do. Ornamental do	50	0 ,, ,, ,,
Hip tiles	4	0 per doz. ,, ,,
Valley tiles	3	6 ,, ,, ,,

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13 10 0	15 0 0
Deals: best 3 by 9.....	13 0 0	14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0
Battens: best 2½ by 6 and 3 by 6 ..	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	,, ,, ,,
2 in. by 4 in. and 2 in. by 6 in....	9 0 0	10 0 0
2 in. by 4½ in. and 2 in. by 5 in....	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,

WOOD (*continued*).

BUILDING WOOD *(continued)*	At per load of 50 ft. £ s. d.	£ s. d.
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 n.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0
JOINERS' WOOD.	**At per standard.**	
White Sea: first yellow deals, 3 in. by 11 in	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in by 11 in.	18 10 0	20 0 0
„ 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg :—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
„ „ 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
„ „ 3 in. by 9 in.	12 10 0	13 10 0
„ „ battens	10 0 0	11 0 0
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	„
Seconds, regular sizes	33 0 0	„
Yellow Pine oddments	28 0 0	„
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0	0 3 6
Small „ „	0 2 6	0 2 9
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 9
¾ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc.—	**Per square.**	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 0 0 ...	6 15 0
Compound Girders, ordinary sections	7 10 0 ...	8 10 0
Steel Compound Stancheons	9 2 6 ...	10 12 6
Angles, Tees and Channels, ordinary sections	7 10 0 ...	8 10 0
Flitch Plates	7 15 0 ...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns	6 12 6 ...	7 15 0

METALS.

IRON—	Per ton, in London. £ s. d.	£ s. d.
Common Bars	7 0 0 ...	7 10 0
Staffordshire Crown Bars, good merchant quality	7 10 0 ...	8 0 0
Staffordshire "Marked Bars"	9 10 0 ...	—
Mild Steel Bars	8 5 0 ...	8 15 0
Hoop Iron, basis price	8 15 0 ...	9 0 0
„ „ Galvanized	16 10 0 ...	—
("And upwards, according to size and gauge.)		
Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 0 0 ...	—
„ „ 24 g.	10 0 0 ...	—
„ „ 26 g.	11 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 0 0 ...	—
„ „ 26 g.	14 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	15 10 0 ...	—
„ „ 22 g. and 24 g.	16 0 0 ...	—
„ „ 26 g.	17 10 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
„ „ 22 g. and 24 g.	13 0 0 ...	—
„ „ 26 g.	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0 ...	—
„ „ „ 26 g.	13 10 0 ...	—
Cut nails, 3 in. to 6 in.	9 0 0 ...	9 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	15 12 6 ...	—
Pipe in coils	16 2 6 ...	—
Soil pipe	18 12 6 ...	—
Compo pipe	18 12 6 ...	—
ZINC—Sheet—		
Vieille Montagne ....ton	30 5 0 ...	—
Silesian	30 0 0 ...	—
COPPER—		
Strong Sheet....per lb.	0 0 10 ...	—
Thin „ .... „	0 0 11 ...	—
Copper nails .... „	0 0 10 ...	—
BRASS—		
Strong Sheet.... „	0 0 9½ ...	—
Thin „ .... „	0 0 10 ...	—
TIN—English Ingots .... „	0 1 4½ ...	—
SOLDER—Plumbers' .... „	0 0 6½ ...	—
Tinmen's.... „	0 0 8 ...	—
Blowpipe.... „	0 0 9 ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d. per ft. delivered.
„ fourths	2d. „ „
21 oz. thirds	3¾d. „ „
„ fourths	3d. „ „
26 oz. thirds	4¾d. „ „
„ fourths	3¾d. „ „
32 oz. thirds	5¾d. „ „
„ fourths	5d. „ „
Fluted Sheet, 15 oz.	3¼d. „ „
„ 21 oz.	4¼d. „ „
⅛ Hartley's Rolled Plate	3d. „ „
⅛ „ „ „	2¼d. „ „
¼ „ „ „	2½d. „ „

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes ... per gallon	0 1 9
„ „ „ in barrels ... „	0 1 10
„ „ „ in drums ... „	0 2 0
Boiled „ „ in pipes ... „	0 1 11
„ „ „ in barrels ... „	0 2 0
„ „ „ in drums ... „	0 2 2
Turpentine, in barrels ... „	0 4 0
„ in drums ... „	0 4 2
Genuine Ground English White Lead per ton	19 15 0
Red Lead, Dry ... „	19 5 0
Best Linseed Oil Putty ... per cwt.	0 6 6
Stockholm Tar ... per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for **VOLUME LXXXVII.** (July to December, 1904) was given as a supplement with the issue for January 14 last.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-SEVENTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

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PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERDEEN.—For additions to coal stores in Palmerston-road, for the Northern Co-operative Co., Ltd. Mr. J. Milne, architect, 254, Union-street, Aberdeen :—

Mason: D. Weir, Claremont-street, Aberdeen
Carpenters: W. Bisset & Co., Caledonian-place, Aberdeen
Plumber: R. Malcolm, Powis-terrace, Aberdeen
Slater: J. Wilson, Crooked-lane, Aberdeen
Iron: Redpath, Brown, & Co., Edinburgh
— £1,538 18 1

ASPATRIA.—For the reconstruction of overflow weir, the enlargement of a portion of the by-wash channel, and the fixing of a wash-out sluice, at their Chapel House reservoir, for the Aspatria, Silloth, and District Joint Water Board. Mr. C. B. Newton, engineer, Whitehall-chambers, Carlisle :—

J. Laing & Son	£569 0	J. Routledge, Mealsgate*	£484 18
J. Dawson	489 18		

BOSTON (Lincolnshire).—For laundry fittings, machinery, engine, and boiler at the workhouse, for the Guardians. Mr. J Rowell, architect, Church-lane, Boston :—

Goddard, Massey, & Warner, Ltd., Nottingham† ... £901 16 6

BOSTON (Lincolnshire).—For heating the infirmary buildings, for the Guardians. Mr. J. Rowell, architect, Church-lane, Boston :—

Lancashire Heating Co., 34, Temple-court, Birmingham† ... £495

BOSTON (Lincolnshire).—For erecting a new infirmary laundry, boiler house, and mortuary at the workhouse, for the Guardians. Mr. J. Rowell, architect, Church-lane, Boston :—

F. Parker, Norfolk-street, Boston† ... £5,995

BRISTOL.—For painting, cleaning, and other work at Arley Congregational Chapel, Cheltenham-road, for the Deacons and Trustees of Arley Congregational Chapel. Mr. A. Harford, architect and surveyor, 6 and 7, St. Stephen-street, Bristol :—

E. B. Derrick	£228 13 0	F. A. R. Woodward	£162 6 8
S. Barrett & Son	200 0 0	F. Beavan	157 15 0
Cottrell Bros.	198 0 0	J. & F. Dark Bros.	145 10 0
R. F. Ridd	193 0 0	F. W. Waters, Lawrence-hill, Bristol*	127 0 0
C. Broadbear	185 0 0	S. Williams & Sons	109 0 0
J. E. B. James	185 0 0		
E. Walters & Son	178 0 0		

Hot-Water Heating Apparatus and System.

J. & F. Dark Bros., Baston Hill, Bristol* .. £120

CARMARTHEN (South Wales).—For restoration of No. 3, Spilman-street, for Jesus College, Oxford. Mr. R. England, Estates Surveyor for Jesus College :—

T. Morris, Carmarthen ... £398 10

CHADWELL HEATH.—For erecting a temporary shelter in connexion with Ilford Isolation Hospital at Grove-road, for the Ilford Urban District Council. Mr. H. Shaw, Engineer and Surveyor, Town Hall, Ilford :—

F. & A. Willmott, The Hill, Ilford* ... £1,289

COEDPENMAEN.—For alterations and additions to the girls' and infants' departments at Coedpenmaen School, for the Pontypridd Urban District Council. Mr. P. R. A. Willoughby, Surveyor to Council :

W. Davies	£1,837 0 0
Williams & James	1,550 0 0
M. Griffiths, Pontypridd*	1,451 10 10

CROSSNESS.—For dredging Crossness outfall, for the London County Council :—

C. H. Campbell	£5,500	F. Bevis	£3,850
British Dredging Co., Ltd.	4,995	A. Woodhouse	3,425
S. Williams & Sons, Ltd.	4,500	Tilbury Contracting & Dredging Co., Ltd., Mark-lane, E.C.*	2,850
Flower & Everett	4,500		

DEVONPORT.—For building stables at rear of 28, Trafalgar-place, Stoke, Devonport, for Mr. Hawken. Mr. E. M. Leest, architect :—

F. Watts	£179 15	W. Littleton & Son	£134 10
S. Perkins	179 10	C. H. Smith & Son*	132 15
H. Pile & Son	143 10		

DEVONPORT.—For rebuilding the Stoke Inn and adjoining premises, Tavistock-road, Stoke, Devonport, for Mr. Ralph. Mr. E. M. Leest, architect. Messrs. Leest & Adams, quantity surveyors :—

H. Pile & Son	£2,209 10	W. Littleton & Son	£1,886 0
G. H. Smith & Son	1,965 15	Pearce Bros.*	1,658 0

EASTLEIGH (Hants).—For erecting a Baptist chapel. Messrs. J. Wills & Sons, architects, Victoria-chambers, Derby :—

Golding & Ansell, Southampton* £3,118 10 2

EDMONTON.—For erecting buildings for stores at the rear of the Town Hall, for the Urban District Council. Mr. H. W. Dobb, Architect, Town Hall, Lower Edmonton :—

A. Porter	£291 0 0	M. C. Read	£217 19 0
J. Thomas	286 0 0	A. G. Chrisp, Walthamstow*	188 0 0
A. Wallis	230 2 8		
J. Groves & Sons	219 0 0		

TENDERS.—*Continued on page* 585.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, etc., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*New Free Public Library	Hove Corporation	50*l.*, 30*l.*, and 20*l.*	Aug. 1
*System of Waterworks and Canalisation, Croatia	Burgomaster of Karlstadt	Not stated	See Advt.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Road Metal	Stratford-on-Avon Town Council	R. Dixon, Borough Surveyor, Municipal Offices, Stratford-on-Avon.	May 27
Blackswell Hall	Committee	J. Wilson, Blackswell, Ireland	do.
Additions, Caeran and Spilters Co-operative Stores	Trustees	Evans & Jones, Architects & Surveyors, 4, Trinity-pl., Swansea	May 29
120 fathoms of Swedish Board Ends	Kingston Guardians	J. Edgell, Union Offices, Coombe-road, Kingston-on-Thames	do.
Asphalt. Yds., etc., Train. Inst., Hartley-rd., N'ham.	.....	Poor Law Offices, Nottingham	do.
Heating and Ventilation, Storthes Hall Asylum	West Riding C.C.	J. Vickers-Edwards, County Architect, County Hall, Wakefield	do.
Painting of Corrugated Iron Hospital, Roman-road	East Ham Corporation	A. H. Campbell, Borough Engineer, Town Hall, East Ham, E.	May 30
Private Improvement Works	Bootle Corporation	Borough Engineer's Office, Bootle	do.
Reconstruction of Croal Intercepting Sewer	Bolton Corporation	E. L. Morgan, Borough Engineer, Town Hall, Bolton	do.
Reconstruction of Croal & Tonge Intercepting Sewer	do.	do.	do.
Ironwork in Bridges crossing the Croal	do.	do.	do.
40 ft. Spans, Switches, and Crossings	Secretary of State for India	Director-General of Stores, India Office, Whitehall, S.W.	do.
Painting on Malton and Driffield Branch	N.E.Ry. Co.	H. J. Rudgard, District Engineer, York	do.
800 tons of Broken Whinstone or Granite	Pontefract Corporation	J. E. Pickard, Borough Surveyor, Municipal Offices, Pontefract	do.
500 tons of Broken Dross	do.	do.	do.
Street Works, Llanbradach	Caerphilly U.D.C.	A. O. Harpur, Surveyor, Council Offices, Caerphilly	do.
Extension of Sewer, Shenley-road, Radlett	Watford R.D.C.	E. Lalley, Engineer, 9, Market-street, Watford	do.
Alters. to Mill Race, etc., Greenvale Mills, Kilkenny	.....	Manager, Kilkenny Woollen Mills, The Parade, Kilkenny	do.
Road Materials	Irlam U.D.C.	J. Cooke, Clerk, Irlam	do.
Hoppers and Mechanical Malt-Handling Appliances	Distillers Co., Ltd.	Knockdhu Distillery, Knock, Banffshire	do.
Terra-Cotta for Seymour-road School, Clayton	Manchester Education Committee	Offices in Deansgate, Manchester	do.
*Making-up and Paving Works	Hammersmith Borough Council	Borough Surveyor, Town Hall, Hammersmith, W.	May 31
Spiral and Volute Springs	East India Railway Co.	C. W. Young, Secretary, Nicholas-lane, London, E.C.	do.
Laying down Playing Pitch	Carlisle United Assoc. Football Club	H. Foxall, Architect, Carlisle	do.
Enclosing Ground and Building Grand Stand	do.	do.	do.
Making Westfield-road	Hemsworth R.D.C.	J. Scholefield, Clerk, Hemsworth, near Wakefield	do.
Privies, Ashpit, Play-shed, etc., Yafforth School	.....	Mr. Wristell, Northallerton	do.
Fixing Benches, Tables, etc., at Technical School	Plymouth Education Authority	E. C. Cook, 18, Princess-square, Plymouth	do.
Glass Writing Tables at Technical School	do.	do.	do.
Excavating 5,000 cub. yds. Shale and Rock, Kingston	.....	Jackson & Fox, Architects, 7, Rawson-street, Halifax	do.
Four Tenements of Dwelling-houses, Bridgeton	Glasgow Corporation	City Engineer, 64, Cochrane-street, Edinburgh	do.
Reconstruction of Offices	Edinburgh Parish Council	R. M. Cameron, Architect, 53, Great King-street, Edinburgh	do.
Electric Passenger Lift, Council Offices, Castle-terrace	do.	do.	do.
Dwelling-houses, Grant-street, Burghead	.....	J. Jamieson, Architect, 77, High-street, Elgin	do.
9,000 sq. yds. Permanent Paving	Watford U.D.C.	H. M. Turner, Clerk, Council Offices, 14, High-street, Watford	do.
Making-up Roads	do.	D. Waterhouse, Surveyor, Council Offices, 14, High-st., Watford	do.
Road Works, Oswaldtwistle, Lancs.	Highway and Drainage Committee	R. N. Hunter, Surveyor, Town Hall, Oswaldtwistle	do.
100 tons of 27-in. Cast-Iron Pipe Sewer	West Bromwich Corporation	A. D. Greatorex, Borough Engineer, Town Hall, West Bromwich	do.
Removing Brick Sewer and Laying Cast-Iron Pipes	do.	do.	do.
Making-up Soham-road, Enfield Lock	Enfield U.D.C	R. Collins, Surveyor, Public Offices, Enfield	do.
Small School-house, Killichonan	Kinloch Rannoch School Board	W. Bell, Architect, Aberfeldy	do.
School, Lydgate-lane, Crookes	Sheffield Education Committee	W. J. Hale, Architect, 3, St. James'-row, Sheffield	June 1
Work at Appleton Roebuck New Schl., nr. Tadcaster	West Riding C.C. Education Com.	J. Vickers-Edwards, County Architect, County Hall, Wakefield	do.
Work at Brierley, Grimethorpe School, near Barnsley	do.	do.	do.
Work at Copmanthorpe School, near York	do.	do.	do.
Work at Crofton Provided School, near Wakefield	do.	do.	do.
Work at Golcar Crow-lane School, near Huddersfield	do.	do.	do.
Work at Golcar Knowl Bank School, nr. Huddersfield	do.	do.	do.
Work at Golcar Wellhouse School, nr. Huddersfield	do.	do.	do.
Work at Linthwaite Central School, nr. Huddersfield	do.	do.	do.
Work at Stanley and Outwood School, nr. Wakefield	do.	do.	do.
Work at Swinefleet School, near Goole	do.	do.	do.
Work at Wheatley Provided School, near Doncaster	do.	do.	do.
Work at Worsborough Birdwell School, nr. Barnsley	do.	do.	do.
Work at Worsborough Blacker School, nr. Barnsley	do.	do.	do.
Work at Worsborough Common Provided School	do.	do.	do.
Work at Yeadon School, near Bradford	do.	do.	do.
Street Paving	Gateshead Corporation	N. P. Pattinson, Borough Engineer, Town Hall, Gateshead	do.
Flints	Greenwich Borough Council	Borough Engineer, Town Hall, Greenwich, S.E.	do.
Scavenging	Blaydon U.D.C.	R. Biggins, Sanitary Inspector, Council Offices, Blaydon-on-Tyne	do.
Mechanics' Institute, Pontardulais, near Swansea	.....	W. Beddoe Rees, Architect, 3, Dumfries-place, Cardiff	do.
Warehouse at Cardow Distillery, Strathspey	.....	C. C. Doig, Architect, Elgin	do.
Sewers in Convamore-road, etc., Bramhall	Hazelgrove U.D.C.	G. S. Doncaster, Surveyor, Council Offices, Hazelgrove, Cheshire	do.
Additions, etc., to Farm Buildings at Wester Kintrea	.....	J. Wittet, Architect, Elgin	do.
Additions, etc., to Farm Bldgs., Newton of Blackhills	.....	do	do.
Additions, etc., to Farm Bldgs., Troves and Viewhill	.....	do.	do.
Alterations, etc, De Sully Grange, Homestead, Sully	Hon. Ivor C. Guest, M.P.	J. L. Lambert, Surveyor, Prudential-buildings, Bridgend	June 2
Extension of Water Main to Allonby and Hayton	Aspatria, etc., Water Board	W. Pearson, Engineer, Bank-chambers, Aspatria	do.
Heating Apparatus in Newgate Schools	Mansfield Education Committee	Vallance & Westwick, White Hart-chambers, Mansfield	do.
Additions and Alterations to Farmhouse, Miltonhill	.....	C. C. Doig, Architect, Elgin	do.
Additions & Alterations to Farmhouse, Wester Coltfield	.....	do.	do.
*Renovating Hall and Institute	South Bermondsey Club, etc.	Steward, Rotherhithe New-road, S.E.	do.
Sewerage Works, Ellesmere-road	Walton-on-Thames U.D.C.	R. Wilds, Engineer, Council Offices, Walton-on-Thames	June 3
Colliery Timber	South Hetton Coal Co., Ltd.	J. R Lambert, South Helton, near Sunderland	do.
Caretaker's House, Victoria Cemetery	Carrickfergus U.D.C.	W. D. R. Taggart, Architect, Scottish Provident-buildings, Belfast	do.
Vicarage at Llandilo	Rev. R. Williams, M.A.	D. Jenkins, F.R.I.B.A., Llandilo	do.
Alters., etc., Heaton Park British School, Prestwich	Lancashire Education Committee	Clegg & Thorp, Architects, 41, Corporation-street, Manchester	do.
Tramway Rail Bonds	Manchester Tramways Committee	J. M. M'Elroy, 55, Piccadilly, Manchester	do.
Colliery Timber	Walter Scott, Ltd.	Storekeeper, Trimdon Grange Colliery	do.
Police-station, Cwmavon	Glamorgan Quarter Sessions and C.C.	T. M. Franklin, Glamorgan C.C. Offices, Westgate-street, Cardiff	do.
Erecting St. Paul's Church, Glasgow	The Corporation	C. Young, 141, West George-street, Glasgow	do.
Fourteen Cottages at Langley Park	Consett Iron Co.	C. E. Oliver, General Offices, Consett, Co. Durham	do.
A Cottage at Consett	do.	do.	do.
Engiargement of Springfield Council School	Ipswich Education Committee	Bisshopp & Cantley, Architects, 32, Museum-street, Ipswich	June 5
Sewer, Wanngoch District, Beaufort	Ebbw Vale U.D.C.	T. J. Thomas, Town Surveyor, Ebbw Vale	do.
Painting Market Hall, etc.	Leicester Markets Committee	E. G. Mawbey, Borough Surveyor, Town Hall, Leicester	do.
Repair of Asphalt Paving for Twelve Months	Glasgow Corporation	W. W. Lackie, Electrical Engineer, 75, Waterloo-street, Glasgow	do.
Five Hses. and Five Flats, Edgewell Colliery, Prudhoe	Mr. W. Wilkinson	Mr. Hall, Post Office, Prudhoe	do.
Sinking Two Boreholes at Boughton Works	Nottingham Water Committee	Water Engineer, St. Peter's-square, Nottingham	do.
Water and Drainage Works at Mansion of St. Brides	.....	J. Barbour & Bowie, Architects, Dumfries, N.B.	do.
Street Works, Basford	Basford R.D.C.	G. W. Hawley, Burton-buildings, Parliament-street, Nottingham	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Sewer, East Den	Kirkcaldy Town Council	J. & A. Leslie & Reid, Engineers, 72A, George-street, Edinburgh	June 6
Setts, Curbs, Flags, Drain Pipes, etc.	Failsworth U.D.C.	G. F. Gray, Surveyor, Council Offices, Failsworth	do.
Buxton Lime and Copperas	do.	do.	do.
Scavenging	Portslade-by-the-Sea U.D.C.	Surveyor, St. Andrew's-road, Portslade-by-the-Sea	do.
Steam & Exhaust Pipe Wk., McDonald-rd. Elec. Sta.	Edinburgh Corporation	Engineer, Dewar-place Station, Edinburgh	do.
Street Works	Liversedge U.D.C.	F. Langley, Engineer, Council Offices, Liversedge	do.
Iron Bandstand, Thomas Town Recreation Ground	Merthyr Tydfil U.D.C.	T. A. Rees, Clerk to Council	do.
Gasholder Tank, Lower Gornal	Sedgley U.D.C.	Manager	do.
Repairs, etc., to Schoolhouse and Office, Tomintoul	School Board of Kirkmichael	Town and County Bank, Ltd., Tomintoul, N.B.	do.
Repairs, etc., to School, etc., Tomachlaggan	do.	do.	do.
*Repair of Tar and Asphalt Paving	Tottenham U.D.C.	Council's Engr., Coombes Croft House, 712, High-road, Tottenham	do.
*Making-up Roads	do.	do.	do.
Private Street Works	Failsworth U.D.C.	G. F. Gray, Surveyor, Council Offices, Failsworth	June 7
Wiring Farm Buildings and Fixing Motors	Brecon and Radnor Asylum	Clerk's Office at Asylum, Talgarth, R.S.O.	do.
Fire-Alarm Installation at Asylum	do.	do.	do.
Public Baths, Manor-street, King's-road, Chelsea	Chelsea Borough Council	Town Hall, King's-road, Chelsea	do.
Annual Contracts	Herne Bay U.D.C.	F. W. J. Palmer, Surveyor, Town Hall, Herne Bay	do.
Fire-Alarms, Telephones, Bells, etc., Bracebridge Asy.	The Visitors	E. B. George, Clerk, Bracebridge Heath, near Lincoln	do.
Road-making, Gloucester-road	Littlehampton U.D.C.	H. Howard, F.S.I., Town Offices, Littlehampton	do.
Class-room, etc., at Glanvilles Wootton School, Dorset	.....	J. Feacey, Architect, South Walks, Dorchester	do.
*Painting, etc., Workhouse, near Edgware	Hendon U.D.C.	Clerk to the Guardians, Union Offices, Edgware	do.
*Extension, Admin. Block, Muswell-hill Isolation Hosp.	Borough of Hornsey	Boro. Engr. & Sur., Municipal Offices, 99, Southwood-lane, Highgate	do.
*1,200 tons of Quenast Guernsey or other Granite	Borough of Kingston-on-Thames	Borough Surveyor, Municipal Offices, Kingston-upon-Thames	do.
*Removal of Old Buildings	Holborn Union	Clerk, Holborn Union Offices, 53, Clerkenwell-road, E.C.	do.
*Making-up Carriageways of Streets	Fulham Borough Council	Borough Surveyor, Town Hall, Fulham, S.W.	do.
Alterations, etc., to School Buildings, Weaverham	Sub-Committee for Northwich	H. Beswick, County Architect, Newgate-street, Chester	June 8
Stores	Cambrian Railways Co.	Stores Office, Cambrian Works, Oswestry	do.
*New Public Offices and Town Hall	Action U.D.C.	W. G. Hunt, Architect, 17A, Vicarage-gate, W.	June 12
School of Art, Queen-street	Burslem Town Council	A. R. Wood & Son, Architects, Queen-st., Burslem	June 13
3,000 sq. yds. of Tarred or Asphalted Footways	Ryton U.D.C.	J. P. Dalton, Surveyor, Council Offices, Ryton-upon-Tyne	June 14
Plant (Electricity Works)	Ossett Town Council	W. Emmott, Engineer, 35, Commercial-street, Halifax	do.
*Widening County Bridge, Radstock	Radstock U.D.C.	G. H. Gibson, Surveyor, Council Offices, Radstock	do.
*Rebuilding of Newport (Mon.) Head Post-office	Commissioners of H.M. Works, etc.	H.M. Office of Works, Storey's-gate, S.W.	do.
*Erection of Bridge, etc.	Petworth R.D.C.	Council's Office, Petworth	do.
*Enlargement of George-street Post-office, Gloucester	H.M. Office of Works	H.M. Office of Works, Storeys-gate, Westminster, S.W.	do.
Carsheds for Light Railways, Priory-road	Dartford District Council	T. E. Tiffin, Surveyor, Council Offices, Dartford	June 19
*Tak. Dwn. Old Police Stn. Bldgs., & erect. Free Library	Rhyl U.D.C.	Town Surveyor, Council Offices, Clwyd-street, Rhyl	June 21
Steel Rails and Fish Plates	Agent-General for Victoria	142, Queen Victoria-street, London, E.C.	Aug. 7
Stores	Warrington Gas Committee	W. S. Haddock, Gas Engineer, Warrington	No date.
Rectory, Blama, Mon.	Rev. O. Davies	J. Cook Rees, Architect, Neath	do.
Schoolmaster's House, Duddo, Northumberland	.....	A. B. Plummer, F.R.I.B.A., 13, Grey-street, Newcastle-on-Tyne	do.
Parochial Buildings, Chevington, Northumberland	.....	do.	do.
Pull. Down & Rebuild. King's Head Hl., Pontnewydd	Phillips & Sons	Swalwell & Havard, Steam Packet-chbrs., Dock-st., Newport, Mon.	do.
Roads and Sewers, Pontnewydd Gardens Estate	do.	do.	do.
Pulling Down and Rebuilding House, Kirby Malzeard	.....	T. Richmond, Spring House, Grewelthorpe, Ripon	do.
*Villa Residences, Sketty, Swansea	Grosvenor Building Club	H. Kennard, Architect, 13, Railway-approach, London Bridge, S.E.	do.
Rebuilding Showrooms, etc., Working-street, Cardiff	Cross Brothers	H. Budgen, F.R.I.B.A., 96, St. Mary-street, Cardiff	do.
New Road, Bary-road to Dynas Powis	Greenfield Land Co., Ltd.	do.	do.
Three Direct-Coupled Single Phase Motor Pump Sets	Croydon Corporation	A. C. Cramb, Electricity Works, Croydon	do.
Alterations to Premises, St. Andrew's Dock, Hull	Union of London and Smith's Bank	Gelder & Kitchen, Architects, 76, Lowgate, Hull	do.
Iron Fixing, etc., New Mill, Leigh, Lancs.	.....	J. W. Cowburn, Builder, Leigh	do.
Boundary Wall, Moorhead, Saltaire	.....	J. Ellis Marten, Architect, Cheapside-chambers, Bradford	do.
*Proposed Mission Hall, South Ealing	The Committee	W. A. Pite, Architect, 116, Jermyn-street, S.W.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Architectural Assistant	Birkenhead Corporation	150*l.* per annum	June 8
*Chief Assistant (Arch. and Building Trades' Dept.)	Northern Polytechnic Institute	125*l.* per annum	June 19
*Chief Assistant (Mechanical Engineering Department)	do.	150*l.* per annum	do.

Those marked with an (*) are advertised in this number. ***Competitions,*** iv. ***Contracts,*** iv. vi. viii. x. ***Public Appointments,*** xviii.

TENDERS.—*Continued from page 583.*

GREAT BADDOW.—For seven cottages, Beehive-lane, Great Baddow. Mr. R. Mawhood, architect, Chelmsford:—

Baker & Sons	£1,898	F. Cracknell, Great Baddow*	£1,565
J. Rayner	1,695		
J. Gowers	1,575		

ILFORD.—For forming new filter beds and providing filter material at the Outfall Works, Water-lane, for the Urban District Council. Mr. H. Shaw, Surveyor to the Council, Town Hall, Ilford:—

D. T. Jackson, 106, Ripple-road, Barking* £9,660 12 11

KNARESBOROUGH.—For constructing an iron siphon under the river Nidd, for the Rural District Council of Knaresborough. Mr. W. S. Lupton, Surveyor. Quantities by Surveyor:—

F. U. Simpson	£674 13 6	Messrs. Leedham & Co., New Park, Harrogate*	£244 18 6
Parker & Sharpe	318 1 3		
E. Long	316 18 0		
T. Cook Starkey	289 7 5		

LONDON.—For the reconstruction of a urinal in Berwick-street, Pimlico, for the Westminster City Council:—

H. Doulton & Co.* £150

LONDON.—For the erection of a new police-station at Notting Hill. Mr. J. Dixon Butler, Architect, Surveyor to the Metropolitan Police, New Scotland Yard. Quantities by Messrs. Thurgood, Son, & Chidgey, Charing Cross-chambers, Duke-street, Adelphi:—

Lole & Lightfoot	£12,849	Aldin Bros.	£11,973
Lascelles & Co.	12,700	Spencer & Co.	11,947
Holloway Bros.	12,676	Mowlem & Co.	11,936
Lathey Bros.	12,549	Ashby & Horner	11,850
Lovatt Ltd.	12,330	Grover & Son	11,784
Harris & Wardrop	12,246	Lawrance & Son	11,675
F. & F. Higgs	12,160	Leslie & Co.	11,305
F. G. Minter	11,997		

LONDON.—For accumulators, Greenwich electricity generating station, for the London County Council:—

—	Supply, delivery, and erection.	Maintenance.
Tudor Accumulator Co., Ltd., London*	£1,875 12 0	£1,120 0
British Accumulator Co., Ltd.	1,947 10 0	1,200 0
Electrical Power Storage Co., Ltd.	2,105 18 0	900 0
D. P. Battery Co., Ltd.	2,173 0 8	1,3 0 0
Chloride Electrical Storage Co., Ltd.	2,177 0 0	1,170 0
Accumulator Industries, Ltd.	2,371 2 4	1,045 0
A. B. P. Accumulator Co., Ltd.	2,755 11 0	2,000 0
Hart Accumulator Co., Ltd.	3,447 6 0	2,858 10

LONDON.—For the supply of stoneware ducts for electric cables, for the London County Council:—

—	Rate per 1,000 ducts.	Amount of tender (for 750,000 ducts, including full contingencies provision).	Delivery per week.
	£ s. d.	£ s. d.	
G. Skey & Co. Ltd. London*‡	11 19 6	9,481 5 0	5,000
Stanley Bros., Ltd., Nuneaton*§	13 0 0	10,250 0 0	10,000
Stourbridge Glazed Brick and Fireclay Co., Ltd.	14 10 0	3,791 13 4 (for 250,000 ducts only)	4,000
J. Knowles & Co.	14 11 8	11,437 10 0	5,000
H. R. Mansfield	14 11 8	11,437 10 0	5,000
Hosea Tugby & Co., Ltd.	14 11 8	11,437 10 0	5,000
T. Wragge & Son, Ltd.	14 11 8	11,437 10 0	50,000
Sutton & Co.	16 10 0	12,875 0 0	5,000
Ingham's Firebrick Co.	16 13 0	12,987 10 0	10,000
J. F. Cummings & Co.	16 18 6	13,193 15 0	75,000
Naylor Bros.	21 0 0	16,250 0 0	7,500
J. J. Lee	24 0 0	18,500 0 0	10,000

‡ 500,000. § 250,000.

LONDON.—For painting, distempering, and general repairs, etc., at the Infirmary, Fulham-road, for the St. George's Guardians. Mr. A. H. Newman, clerk of works:—

J. J. Richards, 9, Shannon-grove, Brixton*	£626

LONDON.—For overhead travelling cranes, Streatham, Battersea, and Wandsworth sub-stations, for the London County Council:—

Butters Bros. & Co.	£2,385 0
Dougill's Engineering, Ltd.	1,770 0
Cowans, Sheldon, & Co., Ltd.	1,290 0
Parsons, Brierley Hill, Ltd.	1,275 0
Rawlinsons, Ltd.	1,225 0
Steel Rope Pulley Block Co., Ltd.	1,192 0
Flavell & Churchill	1,150 0
T. Smith & Sons	1,128 0
Leeds Engineering and Hydraulic Co., Ltd.	1,085 0
T. Larmuth & Co.	1,025 0
J. Booth & Bros., Ltd.	990 0
J. M. Henderson & Co.	980 0
Pickerings, Ltd.	927 10
J. Spencer & Co.	915 0
Ransomes & Rapier, Ltd.	909 0
Tangyes, Ltd.	871 0
C. & A. Musker (1901), Ltd.	810 0
J. Hitchen & Son, Ltd. §	760 0 / 775 0
Rodgers & Kaye	740 0
Holt & Willett	725 0
J. Smith (Keighley), Ltd.	699 0
J. Carrick & Sons, Ltd. §	680 0 / 761 0
Carrick & Ritchie, Edinburgh*	678 0
J. Gibb & Co., Ltd.	664 0
Jessop & Appleby Bros. (Leicester & London), Ltd.‡	620 0
Herbert. Morris, & Bastert, Ltd.‡	477 8

‡ Not to specification. § Alternative.

LONDON.—For the erection of a disinfecting station at Wood-lane depot, for the Kensington Borough Council. Mr. W. Weaver, Borough Engineer and Surveyor, Town Hall, High-street, Kensington:—

	If with Gazed Bricks Externally.	If with Red Pressed Bricks Externally.
Cunningham, Forbes & Co.	£7,131 15 6	£7,707 19 2
J. Barker & Co., Ltd.	6,002 0 0	5,566 0 0
H. Haynes	5,995 1 9	5,544 7 4
J. Wright	5,450 10 0	5,000 0 0
Patman & Fotheringham, Ltd.	5,223 0 0	4,773 0 0
W. King & Son	5,135 0 0	4,863 0 0
W. Wallis	5,105 0 0	4,802 0 0
Higgs & Hill, Ltd.	4,994 0 0	4,594 0 0
F. Wolisten	4,993 13 8	4,698 7 9
Mattock & Parsons	4,992 0 0	4,583 0 0
Kirk & Randall	4,987 0 0	4,627 0 0
J. Mowlem & Co., Ltd.	4,980 0 0	4,640 0 0
R. Dean & Co.	4,900 0 0	4,526 0 0
L. F. Lamplough	4 872 0 0	4,449 0 0
C. Dearing & Son	4,822 15 1	4,545 5 6
Martin, Wells, & Co.	4,865 0 0	4,550 0 0
T. Bendon	4,775 0 0	4,445 0 0
W. Lawrence & Son	4,773 0 0	4,354 0 0
A. Hudson & Co.†	4,727 0 0	4,456 0 0

NORWICH.—For alterations and additions and part taking down and rebuilding premises, 47, St. Giles's-street. Mr. A. C. Havers, architect, 1, Bank-plain, Norwich. Quantities by architect:—

J. S. Smith	£2,700	J. Evans	£2,455
J. Boddy & Son	2,516	J. Youngs & Son*	2,425
J. Anderson & Son	2,497	H. C. Greengrass	2,400
R. Daws & Son	2,489	A. E. Chapman	2,399
Scarles Bros.	2,465	T. Gill	2,397

[All of Norwich.]
[Architect's estimate, £2,400.]

NORWICH.—For proposed restoration of tower, Church of St. Gregory, Norwich. Mr. H. J. Green, architect and Diocesan Surveyor, 31, Castle-meadow, Norwich:—

J. Youngs & Sons	£823 0 0	A. W. Hall	£645 4 2
G. E. Hawes	656 18 0	J. S. Smith, Norwich*	619 0 0

OULTON.—For the enlargement of the Oulton Council School buildings near Lowestoft, for the East Suffolk County Education Committee. Mr. F. W. Richards, architect, 14, Stanley-street, Lowestoft:—

Mobbs Bros., 57, Maidstone-road, Lowestoft*	£2,000

PORTHCAWL.—For main sewer (398 lineal yds.) at Newton, for the Urban District Council. Mr. R. W. Jones, Surveyor:—

Rees Jones, jun.	£182 0 0	Barnes, Chaplin, & Co.	£139 7 6
Hitt & Sons	158 9 7	W. Jenkins, Bridgend*	136 10 0
R. W. Hunter & Co.	158 9 6		

REDRUTH.—For additions and improvements to the Druid's Hall, for the Public Rooms Co., Ltd. Mr. H. W. Collins, architect, Clinton-road, Redruth:—

Hodge & Opie	£1,596
A. Carkeek, Redruth*	1,580

REIGATE.—For the erection of a residence, Blackhorse-lane, Reigate, for Mr. J. Henderson. Mr. C. E. Salmon, architect, Bell-street, Reigate:—

W. Bagaley & Son	£6,490 0 0	J. King & Son	£6,080 0 0
R. Killick	6,315 13 6	W. Wickman*	5,595 0 0

SANDERSTEAD (Surrey).—For the erection of a detached house in Beechwood-road, Sanderstead, for Mr. and Mrs. G. L. Pepler. Messrs. Pepler & Allen, 3, George-street, Croydon, architects:—

W. Potter	£1,005	Worsfold & Sons*	£978
Grace & Marsh	987		

SPRINGFIELD.—Two shops, Springfield, Essex. Mr. R. Mawhood, architect, Chelmsford:—

F. Cracknell	£800	W. Sarums	£750
W. Fincham	785	Baker & Sons	735
J. Gowers	765	F. Weight, Springfield*	785
Beckett Bros.	753		

STODY.—For partial restoration, Stody Church, Norfolk. Mr. H. J. Green, architect and Diocesan Surveyor, 31, Castle-meadow, Norwich:—

Chatton & Grimson	£2,793 9 7	R. Chapman	£1,626 1 2
		R. W. Riches	1,590 0 0

SWANLEY JUNCTION.—For an addition to the Kent Jam Company's (Ltd.) Factory at Swanley Junction, Kent. Quantities by the architect, Mr. W. S. Skinner, Bristol:—

H. L. Holloway	£3,282	J. Lonsdale, Swanley Junction, Kent*	£2,748
F. & H. F. Higgs	3,225		
W. Johnson & Co.	3,095		
W. F. Blay	2,846		

WESTON SUBEDGE.—For water supply works, for Pebworth Rural District Council:—

W. H. Reading, Wolverhampton	£143 15 8

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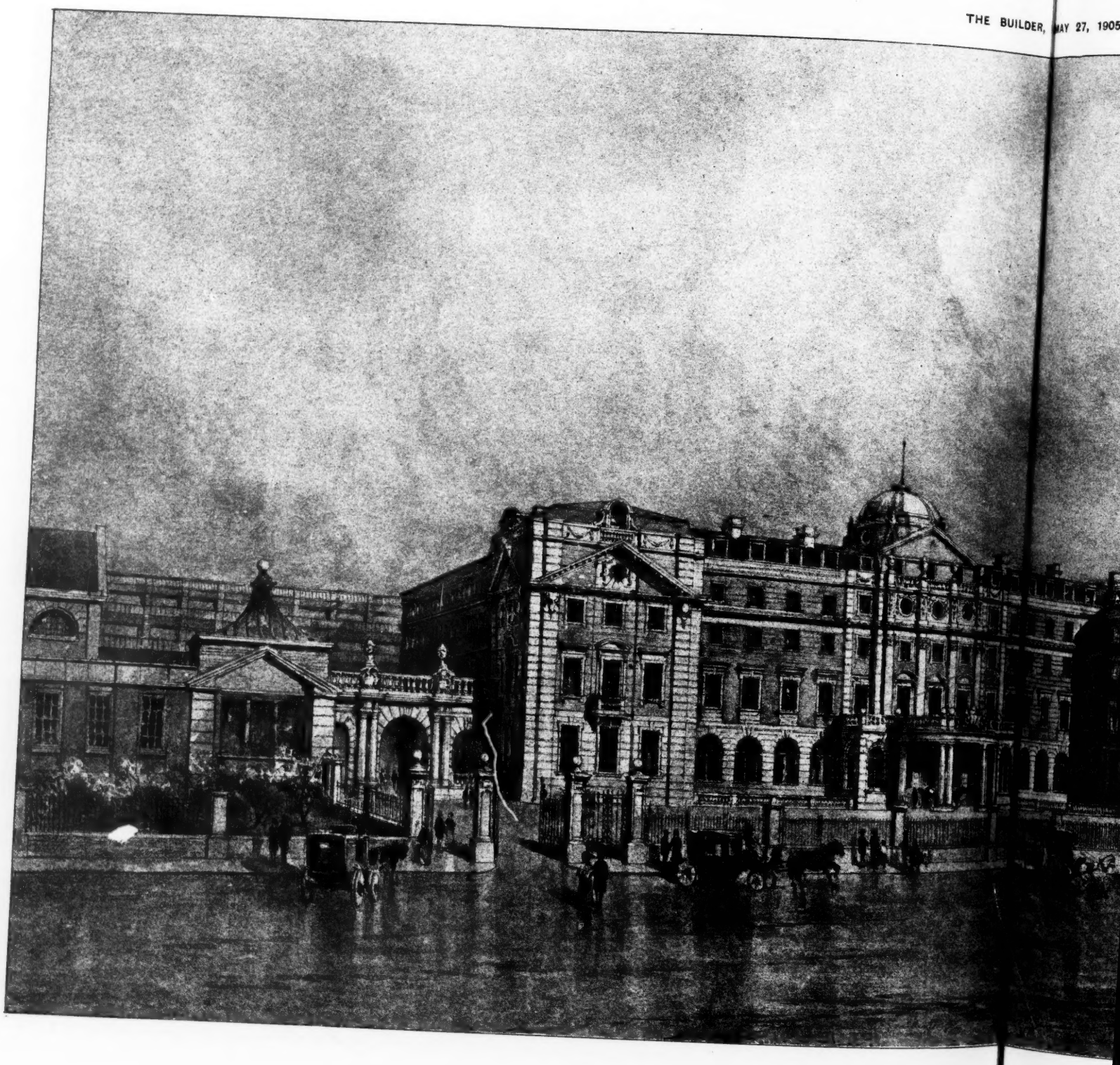
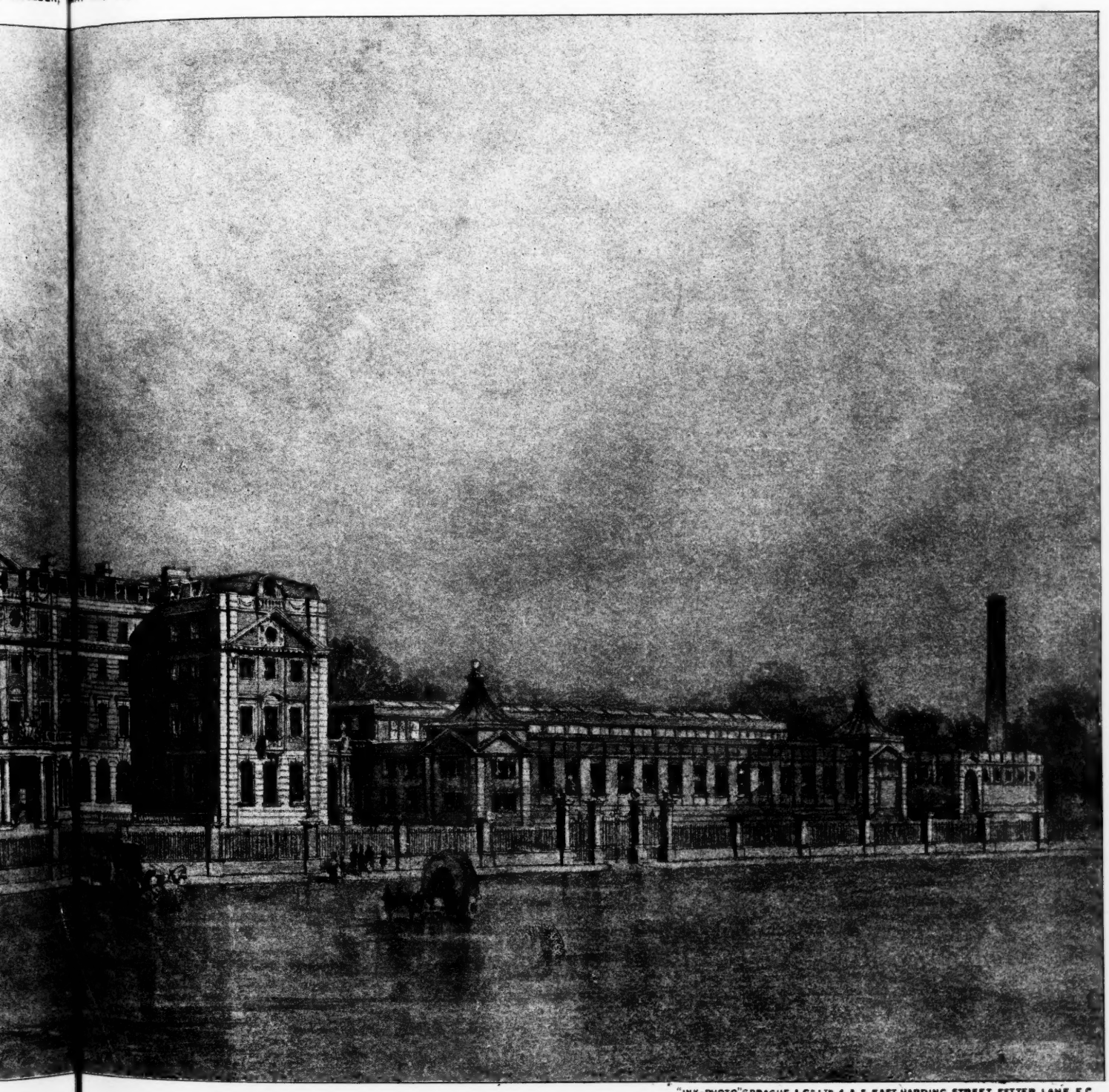


DESIGN FOR RE-BUILDING KING'S COLLEGE HOSPITAL.—MESSRS. W.
VIEW OF ADMINISTRATION BLOCK.



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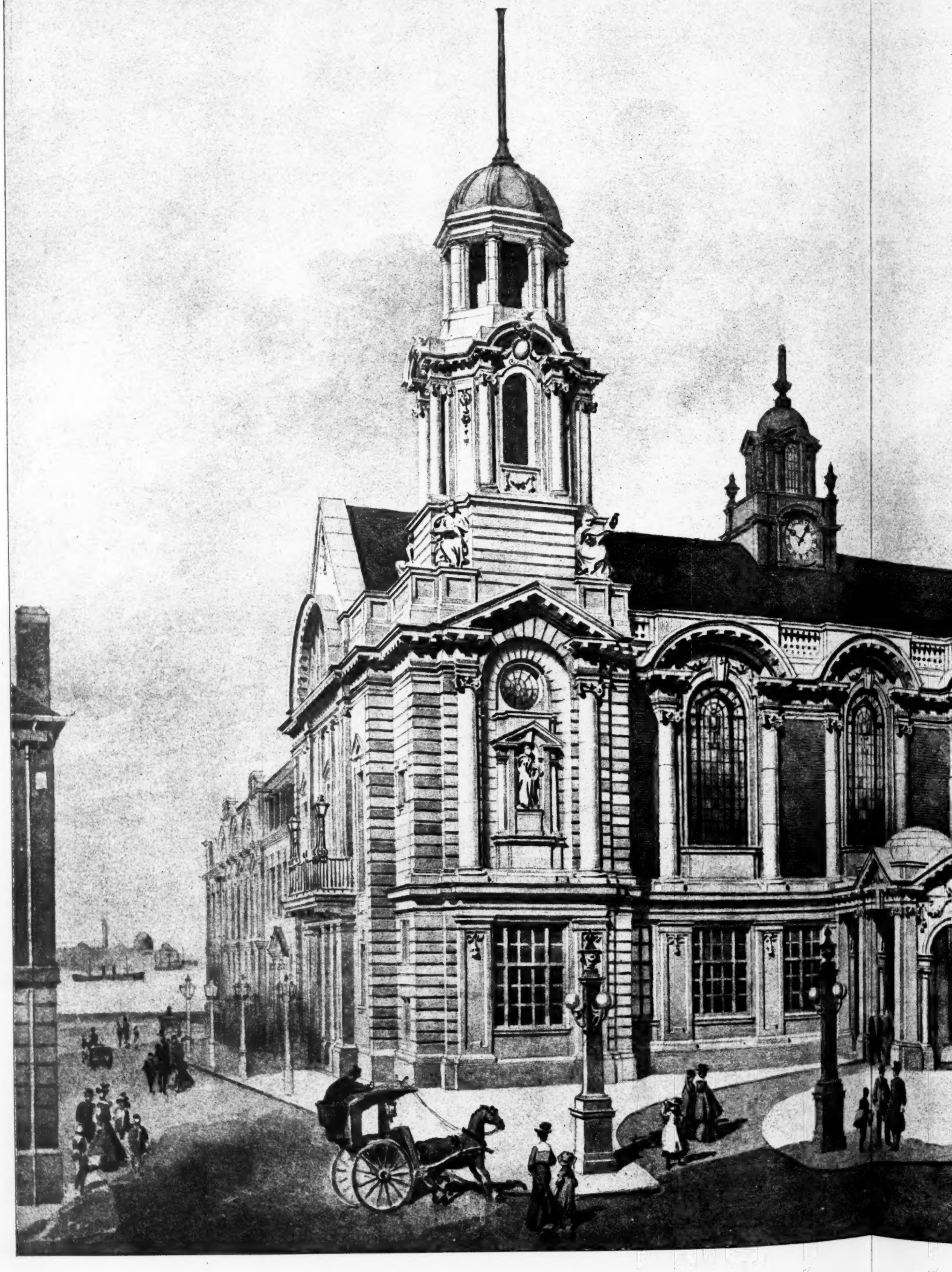
LEGE HOSPITAL.—MESSRS. W. A. PITE & R. J. BALFOUR, ARCHITECTS.
V OF ADMINISTRATION BLOCK.



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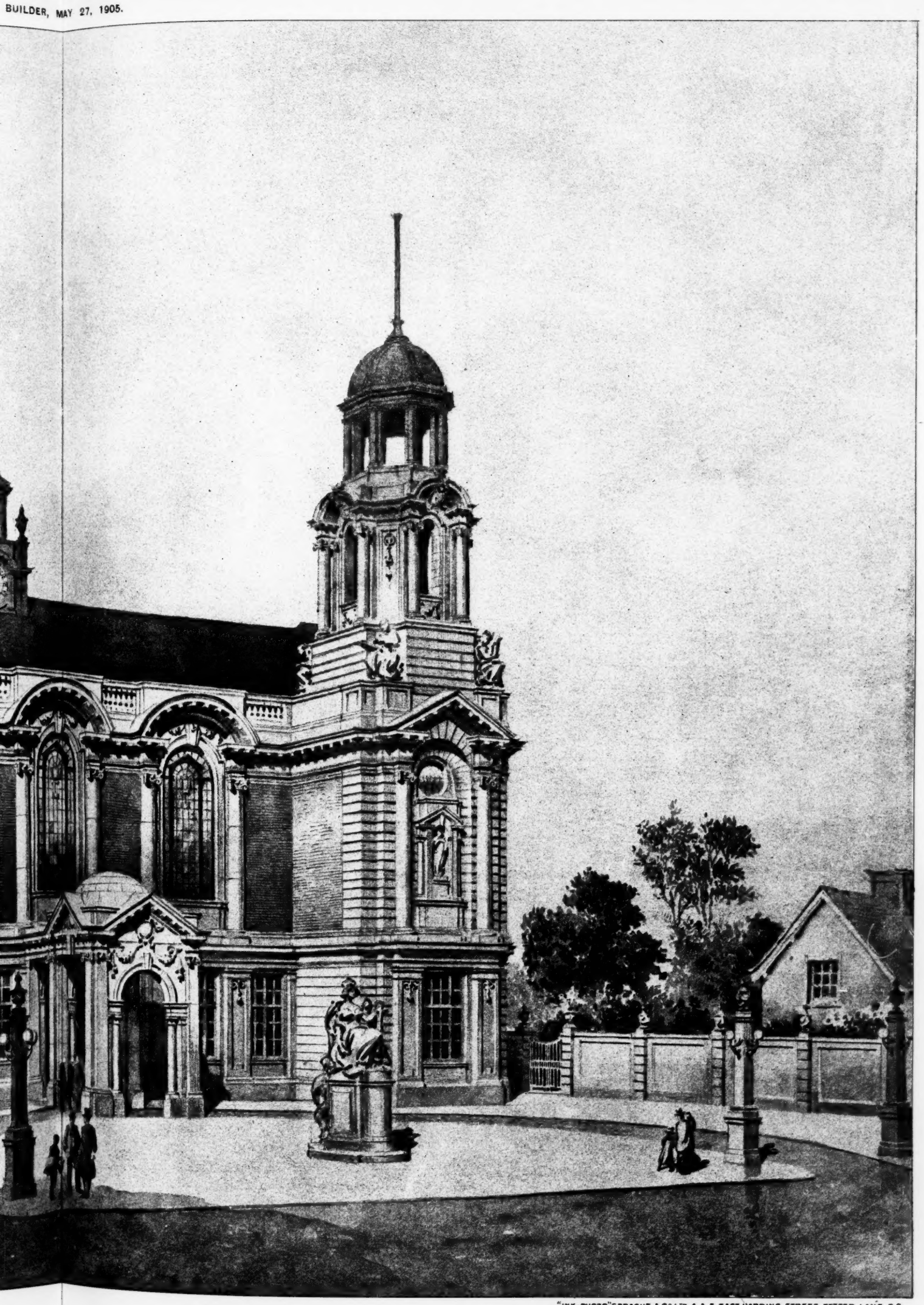

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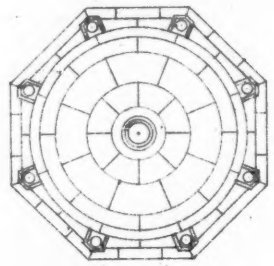
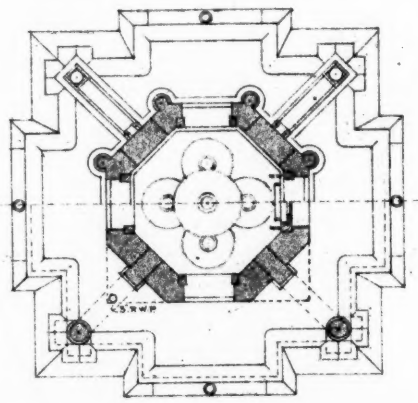


PLAN OF DOME
LOOKING DOWN.

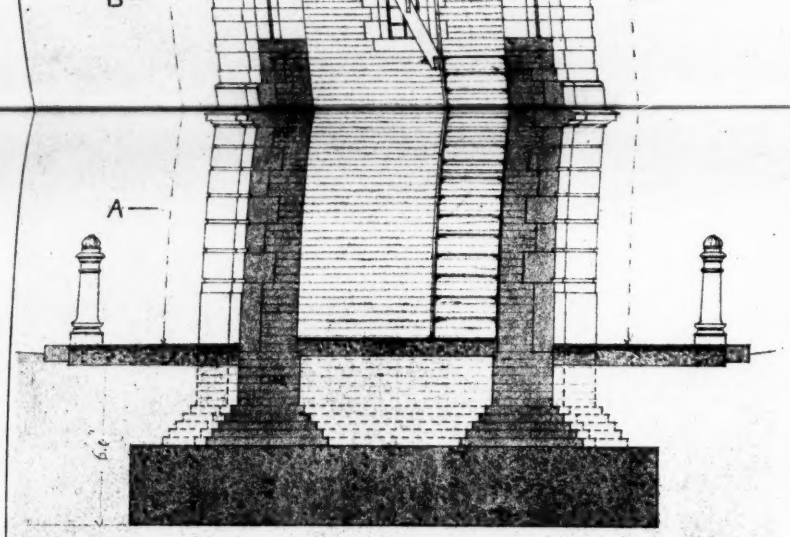
HALF PLAN AT F.



HALF PLAN AT E.

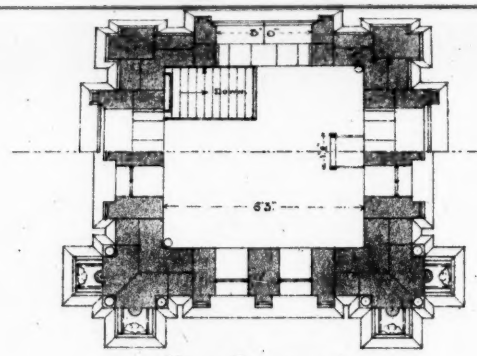
BELFRY

HALF PLAN AT D.



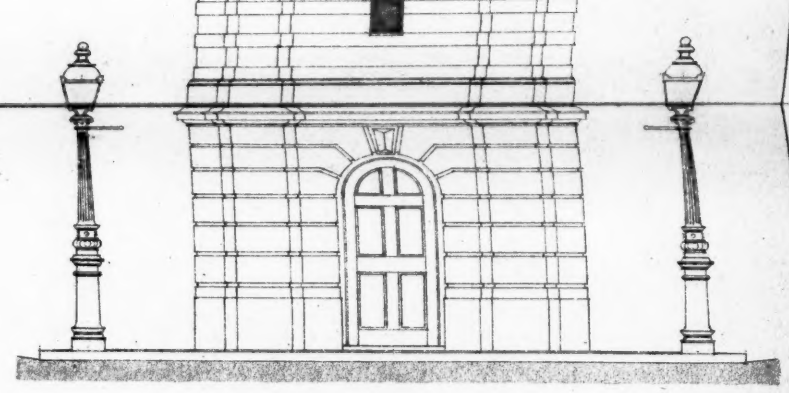
Section

HALF PLAN AT D.



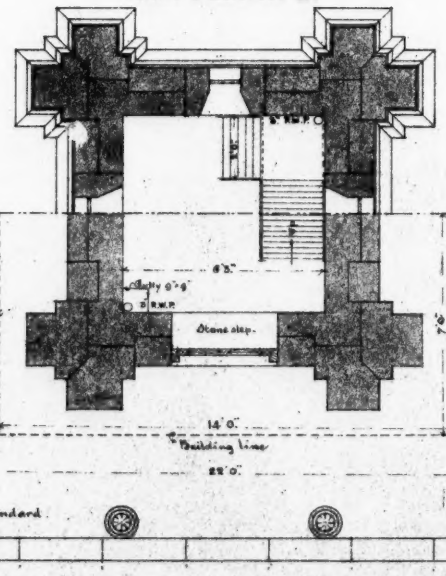
HALF PLAN AT C.

CLOCK CHAMBER



Elevation

HALF PLAN AT B.



HALF PLAN AT A.

Notes for Specification.

1. Concrete. Portland Cement Concrete for foundation, composed of 1 part portland cement to 5 parts clean Thames ballast.

2. Portland Cement Concrete floor 6" thick to Ground floor and Clock Chamber covered with Asphalt paving 1" thick.

3. Brickwork. Brickwork to be built in good hard sound stock or other approved bricks and cement mortar, composed of 1 part portland cement to 4 parts clean washed sand. Brickwork to be finished with fair face inside.

4. Stone. The stone to be Portland stone known as Whitbed.

5. Doors. Entrance door Ground floor and glazed door to Balcony for access to roof to be in English Oak 2" thick, hung to 4"×4" Oak wrot and rebated frames.

6. Louvres. Oak louvres 2" thick and 4"×3" Oak frames to Belfry.

7. Windows. The windows will be cast or wrot iron, glazed with clear plate glass.

8. Stairs. Wrot Iron Stepladders, etc. for access to Clock Chamber and Balcony. The step ladders to Clock Chamber to be 2'0" wide and constructed with 5½"×½" stringe and 2"×½" chequered treads connected to stringe with small angle iron brackets, rivetted on the stringe supported on 2½"×2½" T iron bearers, one end built into the brickwork.
The ladder for access to Balcony above Clock Chamber to be 14" wide with 2"×½" stringe and 1½"×½" treads rivetted to stringe, the latter to have 2"×½" wrot iron stays or Stiffeners, one end rivetted to stringe and other end built into brickwork.
The ladders to have wrot iron handrails, balusters and hand or grip irons all complete.

9. Rain Water Pipes. The water from Balcony will be taken down by means of two 3" rain water pipes in angle of tower to gullies on Ground floor.

10. Refuge. The Refuge will be paved with Asphalt paving 1½" thick on a 6" bed of Portland Cement Concrete and finished with a 9"×6" Granite Curb.

11. Lamps, etc. The Lamp standards and Fender posts will be of McFarlane's manufacture and of stock pattern.

12. Clock Dial. The diameter of the Dial is 3 ft reckoning 1 ft for each 10 ft of height.

13. Cost. The approximate estimated cost of the proposed Clock Tower (exclusive of the Clock) will be £ 1695.18.6.

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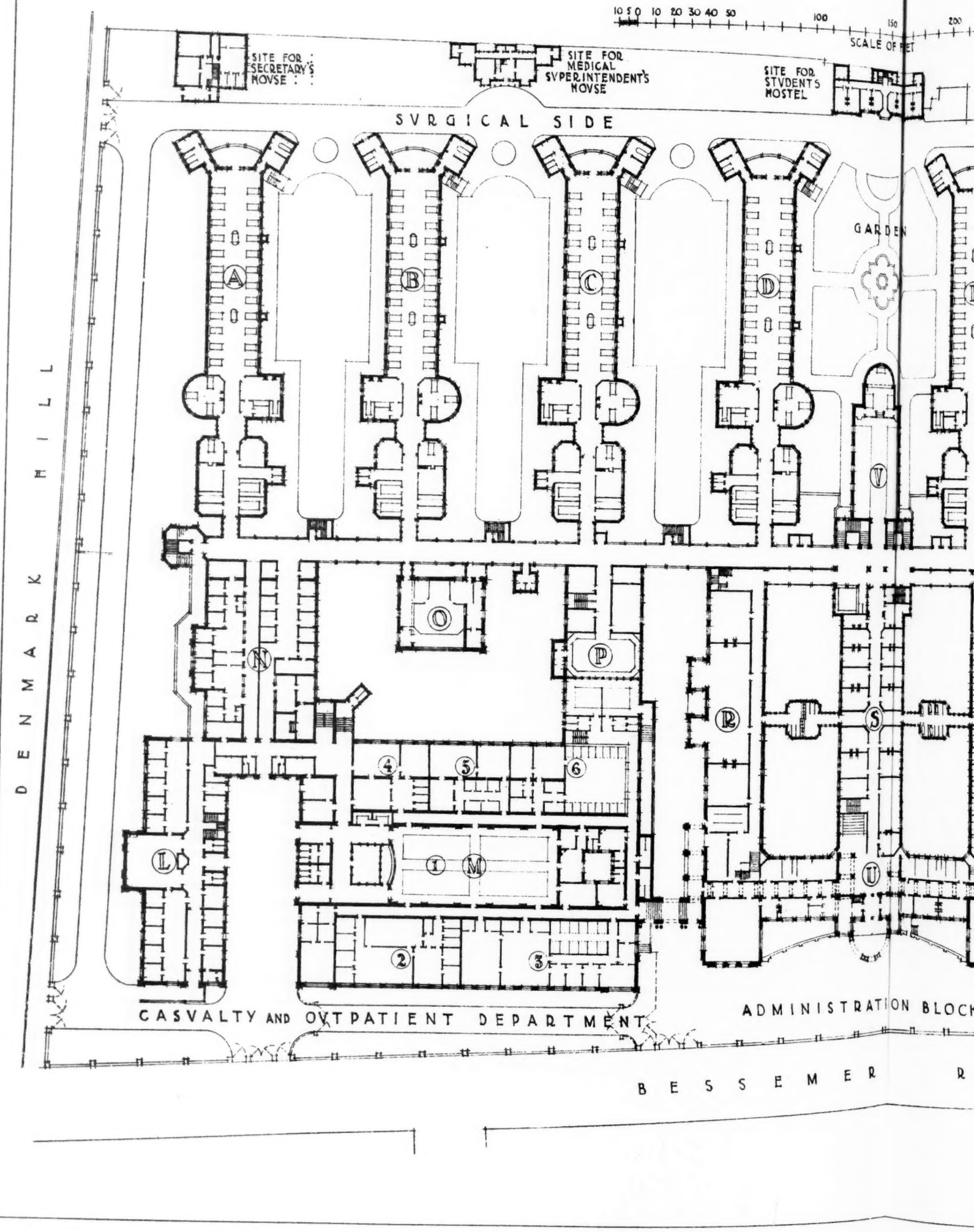
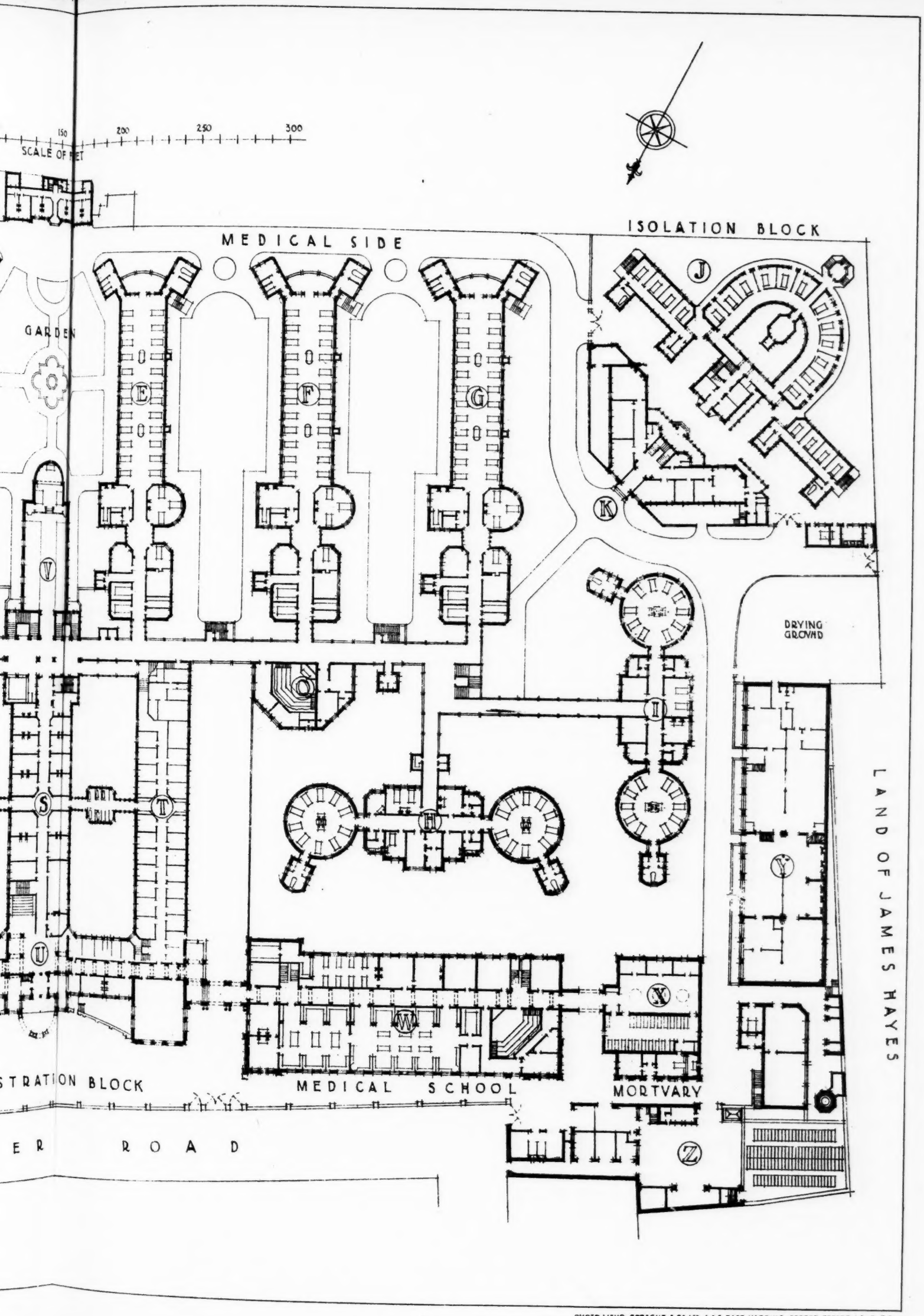
ACCEPTED DESIGN FOR CLOCK TOWER, ST. GEORGE'S CIRCUS, S.E.—MR. JAN F. GROLL, ARCHITECT.

GENERAL BLOCK PLAN



DESIGN FOR RE-BUILDING KING'S COLLEGE HOSPITAL.—MESSRS.

GENERAL BLOCK PLAN.



GE HOSPITAL.—Messrs. W. A. Pite & R. J. Balfour, Architects.

NERAL BLOCK PLAN.